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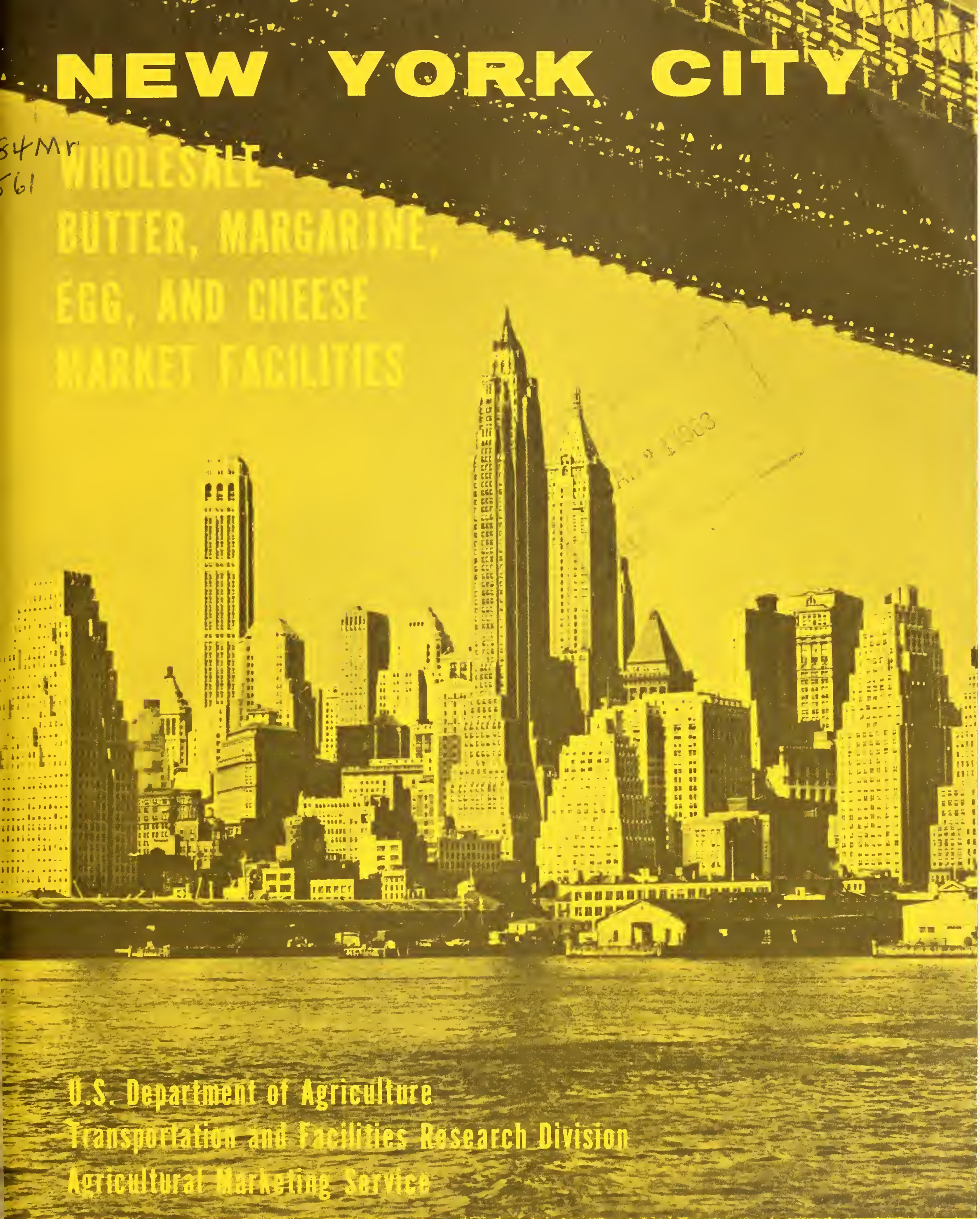

NEW YORK CITY

WHOLESALE BUTTER, MARGARINE, EGG, AND CHEESE MARKET FACILITIES

APR 2 1963

U.S. Department of Agriculture
Transportation and Facilities Research Division
Agricultural Marketing Service

Marketing Research Report No. 561

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Catharine A. Perry and Kenneth H. Brasfield, Agricultural Marketing Service, prepared a scale model of the layouts. Mrs. Perry prepared the illustrations for this report. This study was made under the general supervision of William C. Crow, Director, Transportation and Facilities Research Division, Agricultural Marketing Service.

WASHINGTON, D.C.

December 1962

SUMMARY

Relocation and construction of a new wholesale market for butter, margarine, eggs, and cheese to serve the New York City metropolitan area would effect an estimated saving of $1.7 million to $3.6 million a year in measurable costs of marketing the foods, a study of the market indicated. There would be additional savings of substantial but nonmeasurable amounts, resulting from better working conditions, more efficient purchasing by retailers, improved transportation and traffic conditions, expanded business, and better maintenance of quality of the foods reaching consumers, compared to the situation with the present facilities.

Wholesalers of the four commodities in the present Lower Manhattan market area, handling the bulk of those foods for the metropolitan area, are mostly housed in poorly located, antiquated, and inefficient facilities.

The population of the New York City metropolitan area increased 23.9 percent from 1950 to 1960. To serve this increasing population, the 108 butter, margarine, egg, and cheese dealers on the lower West Side of Manhattan sold 375,696 tons of food in 1960. Of the total, 317,538 tons were direct receipts from points of origin, and the remaining 58,158 tons were obtained from other New York City dealers or warehouses within the city.

These dealers are in an area of 11 approximately rectangular blocks, adjacent to the Washington Street wholesale fruit and vegetable market. They used 950,377 square feet of space, or about 8,800 square feet per dealer, in 1960. Approximately 12 percent of this space was used for coolers maintaining temperatures above 30° F.; 2 percent of the space was below freezing, some of it at 0°; and the remainder included 6 percent for offices, 7 percent for processing, 14 percent for shipping and receiving, 2 percent for sidewalks and platforms, and 57 percent for general storage.

Of the total volume of foods, 91 percent was distributed within the metropolitan area. Brooklyn, Queens, and other Long Island retail outlets received 37 percent; Manhattan, 29 percent; Bronx and Westchester, 17 percent; and the New Jersey metropolitan area, 8 percent. The remaining 9 percent was distributed outside the New York metropolitan area to distant areas throughout the United States.

The largest item of cost of the Lower Manhattan market was $6.7 million for handling foods through the facilities. This expense was due, in large part, to the use of multistory, inefficient facilities, although in many cases handling methods were the best available for the type of facility. Because dealers lacked rail sidings and proper facilities for unloading trucks, another major item of cost was cartage. Although much has been done through the use of trailerports, cartage from trucks unable to unload at dealers' stores still resulted in major costs. Rents for the dealers' facilities totaled $508,000. Transporting the products from the dealers' stores to retail outlets cost $3.2 million. The total cost, from points of initial receipt to retailers, was $13.5 million.

If urban renewal plans force these dealers to relocate, an opportunity would be offered to improve their facilities. In this case, the 108 dealers would require about 200 multiple-occupancy units, including 1 unit for use as a restaurant. These units should have front and rear platforms at truckbed level, 14 feet deep, with a single-track railroad spur in the rear. Each unit would contain 1,750 square feet of enclosed first-floor space, 700 square feet of platform, and 425 square feet of mezzanine space for an office and light storage. The total unit would contain 2,925 square feet, including 50 square feet occupied by walls. The 199 units comprising the stores for the butter, margarine, egg, and cheese dealers would contain 582,075 square feet. Individual firms could use one or more units as required.

These facilities would cost about $8.8 million. In addition, about 80 acres of land costing $4.9 million would be required, making the total cost of the facilities $13.7 million. Such a market could be built at Hunts Point in the Bronx, where wholesale fresh fruit and vegetable facilities are under construction; or at Jersey Meadows, just outside Jersey City, where plans for a food distribution center are being advanced.

There are several ways to finance the facilities. Annual rents needed to amortize the project and make it completely self-supporting would range from $2.03 to $4.66 per square foot, depending on method of financing.

Substantial savings would result if a City of New York Authority or the New Jersey Public Market Commission were to construct the recommended facilities at Hunts Point or Jersey Meadows. Facilities constructed at Hunts Point by a City of New York Authority, with a payment of 50 percent in lieu of taxes, could result in estimated annual savings of $3.6 million, compared to present costs, while facilities constructed at Jersey Meadows by the New Jersey Public Market Commission could result in annual savings of $3.2 million. These savings do not include nonmeasurable savings to wholesalers, market employees, buyers, transportation agencies, the municipality, and consumers.

New York City Wholesale Butter, Margarine, Egg, and Cheese Market Facilities

By Kenneth L. Utter and Earl G. Taylor, *marketing specialists*, and A. B. Lowstuter, *architectural engineer, Transportation and Facilities Research Division*

BACKGROUND OF STUDY

This publication covers one phase of a study of wholesale food marketing facilities in New York City. The first report on the study, on wholesale fruit and vegetable markets, analyzed the possibility of reducing costs of wholesaling fresh fruits and vegetables. The potential cost reductions were estimated at $10 million per year.[1]

The Washington Street Market area, in which most of the fruit and vegetable dealers are located, is to some extent intermingled with facilities used by wholesalers of butter, margarine, eggs, and cheese. Consequently, in this report, substantial use will be made of applicable sections of the report on the fruit and vegetable facilities.

The study on which this report is based was begun after the city of New York committed itself to construct a new wholesale fresh fruit and vegetable distribution center at Hunts Point in the Bronx. At the same time, the old Washington Street wholesale fresh fruit and vegetable marketing area was scheduled for redevelopment under urban renewal. In connection with this redevelopment, it was thought desirable to have plans developed for the butter, margarine, egg, and cheese dealers, for possible use if the redevelopment area were expanded.

This study was designed to—

1. Analyze and evaluate the wholesale marketing situation for butter, margarine, egg, and cheese dealers in the Lower Manhattan area.
2. Estimate the major direct costs of handling these products under present conditions.
3. Suggest the kind and amount of facilities needed for efficient distribution.
4. Estimate costs of constructing and operating these facilities at possible locations in the New York City metropolitan area, and the rentals required at each location.
5. Outline potential benefits possible from construction of the suggested facilities.

Part of the data for this report were gathered by inspectors of the New York City Department of Markets through interviews with the dealers involved. Additional data were obtained from other departments of New York City, various railroads, and through the authors' discussions of problems with industry leaders.

THE PRESENT MARKETING SYSTEM

New York City as a Food Distribution Center

The New York City area is the country's largest market for butter, margarine, eggs, and cheese. In 1960,[2] the New York City-northern New Jersey metropolitan area had over 4.6 million households, containing 14.8 million persons. The number of households in the metropolitan area increased 23.9 percent from 1950 to 1960, and the total population increased 14.3 percent. Some parts of the area have decreased in population in these 10 years: New York County, or Manhattan; Kings County, or Brooklyn; and Bronx County. In 1960, New York City contained over 7.7 million persons, or about 53 percent of the metropolitan area population.

In addition to the growing population of the area, large numbers of people commute and visit New York. About 400,000 persons commute each workday and thousands of visitors, shoppers, and vacationers are in New York City every day.

New York has long been known as one of the world's major transportation terminals. Twelve railroads and several hundred trucking firms serve the city's wholesale and retail trade. The Port of New York annually handles about 40 percent of the Nation's waterborne trade, by value, or 17 percent, by tonnage. This tonnage in 1960 included imports through the Port of New York[3] of 630,000 pounds of butter valued at $265,000 and 41.4 million pounds of cheese valued at $21 million.

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[1] Clowes, H. G. New York City Wholesale Fresh Fruit and Vegetable Markets, U.S. Dept. Agr. Mktg. Res. Rpt. No. 389, 116 pp., illus. 1960.

[2] U.S. Bureau of the Census. Population Reports for 1960.

A comprehensive network of highways, expressways, bridges, and tunnels has been and is being constructed. According to city officials, $500 million will be spent on highway construction now underway or in the planning stage.

Area Studied

In New York City, the principal area in which butter, margarine, egg, and cheese wholesalers are located is adjacent to the Washington Street market described in some detail in an earlier research report (see footnote 1, p. 3). These two areas are generally referred to as the "Lower West Side," and are within a mile of the Battery and the Wall Street financial area. The general location of the areas in reference to other New York landmarks is shown in figures 1 and 2. The butter, margarine, egg, and cheese wholesalers included in this study were all east of Washington Street, south of Franklin Street, west of Henderson Street, and north of Warren Street. Most of the 11 blocks in this area were occupied by such wholesalers, but along the east side of Washington Street, fresh fruit and vegetable wholesalers predominated. The two commodity groups occupy about 71 percent of this 11-block area. Various other types of dealers and firms are interspersed among the butter, margarine, egg, and cheese, and the fresh fruit and vegetable dealers (fig. 3). This study was restricted to the wholesale butter, margarine, egg, and cheese marketing facilities in this area.

The study included neither the volumes nor the operations of the food chain warehouses, the warehousing operations of national meatpackers, nor the operations of some 25 independent butter, margarine, egg, and cheese dealers located in other parts of the metropolitan area. No determination of the volume handled by these dealers was made.

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[3] U.S. Bureau of the Census, unpublished data from worksheets, classification of imports for Customs District 10 (New York).

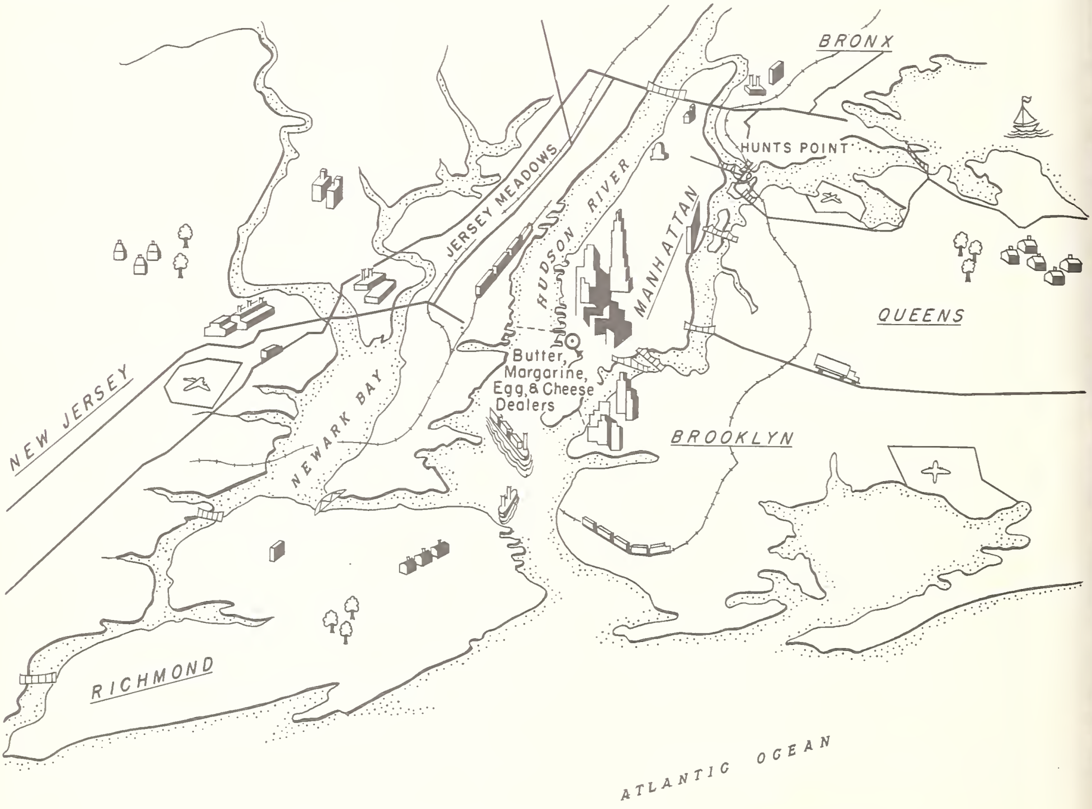

FIGURE 1.—Areas served by the butter, margarine, egg, and cheese dealers in New York City.

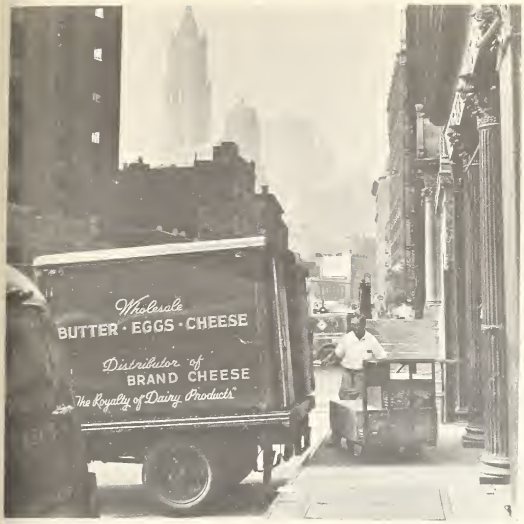

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FIGURE 2.—Wholesale butter, margarine, egg, and cheese facilities located near the Battery.

Sources of Supplies

During 1960, the 108 dealers in the Lower Manhattan area who handled butter, margarine, eggs, and cheese received over 635 million pounds (317,538 tons) of these commodities. Almost 92 percent of this tonnage arrived in the New York area by truck. A detailed breakdown of receipts by the dealers handling the various product combinations appears in table 1.

Until 1960, the U.S. Department of Agriculture's Market News Service collected data indicating the origin of various commodity shipments. The market news data, adjusted to include only the dealers in the Lower Manhattan area, show that over 67 percent of the butter came from three States—Iowa, Minnesota, and Wisconsin. Of the shell and frozen eggs, 47 percent came from Iowa and Minnesota. However, substantial amounts of shell and frozen eggs were received also from surrounding States; New Jersey, New York, and Pennsylvania originated over 36 percent of the volume. Domestic cheese was received in large quantities from Wisconsin and upstate New York. An additional 21 percent of the total cheese receipts came from foreign countries. Some cheese was received from almost all countries exporting cheese. Origins of each of the commodities are shown on the maps in figure 4.

TABLE 1.—*Direct receipts of butter, margarine, eggs, and cheese by Lower Manhattan dealers, New York City, 1960*

Commodity	Rail	Ship and air	Truck	Total direct receipts
	Tons	*Tons*	*Tons*	*Tons*
Butter	11, 942	68	28, 017	40, 027
Margarine	1, 904		5, 230	7, 134
Eggs			236, 002	236, 002
Cheese	6, 112	7, 248	20, 706	34, 066
Miscellaneous			309	309
Total	19, 958	7, 316	290, 264	317, 538

Transportation Facilities

Rail Facilities

The Lower Manhattan market area has no rail connections, so supplies arriving by rail are unloaded at railroad yards and piers in other parts of Manhattan and in New Jersey. However, only 6 percent of the commodities studied in this report were received by rail. The dealers stated that, because of the small volume involved, they had no set pattern for receiving merchandise at any specific railyard. The line by which a shipment arrived normally determined where the car would be spotted.

Ship Facilities

According to customs reports, 41,466,432 pounds of cheese was imported in 1960 through the port of New York (Customs District 10).[4] This cheese was of nearly every type produced in the world. However, the most common domestically produced cheese (cheddar) represented less than 4 percent of these imports. The volume of cheese imported in 1960 through the port of New York was almost 66 percent of all the cheese imported into the United States. Of the 41 million pounds imported through New York, about 14 million pounds, or 35 percent, was physically handled by cheese dealers in the Lower Manhattan market area. These dealers acted as import agents for much of the rest. A total of 68,000 pounds of butter was imported by the 108 dealers. This was only a small percentage of the butter imported through the port of New York.

Butter and cheese shipments arrived at about a dozen deep-water piers in New York and New Jersey. The location depended on the berth of the steamship line carrying the particular shipment. The butter or cheese was unloaded on the dock and moved to the store of the importing firm. Butter was moved into storage or printed, depending upon the market situation. Cheese, unless sold directly to some other firm, was normally stored for varying periods of time, depending upon the type, the amount that could be sold, and the price.

In many instances, Lower Manhattan dealers acted only as import agents and did not physically handle the cheese, but requested the transpor-

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[4] See footnote 3, p. 4.

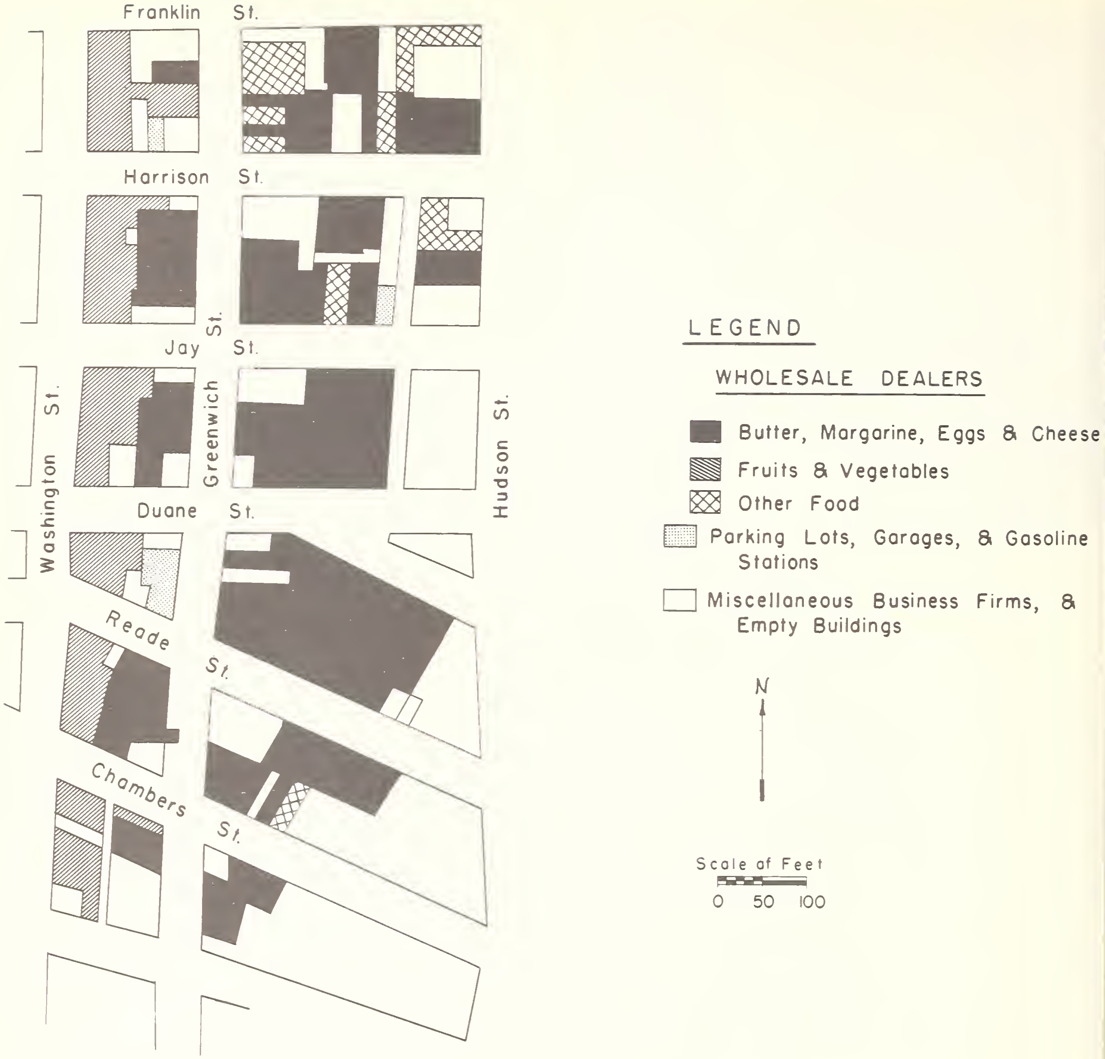

Figure 3.—Land use within the butter, margarine, egg, and cheese wholesaling area.

tation companies to deliver it to whoever purchased it—often in some distant city. When a dealer acted only as the import agent, such tonnage was not included in the Lower Manhattan data.

Truck Facilities

Direct truck shipments accounted for most of the tonnage received by dealers in this area. The area in which these dealers operate has been declared by the city of New York to be a "congested area," and is therefore closed to trucks over 33 feet long. The only exception to this regulation is that larger trucks may enter the area if they are going to "offstreet" loading docks, and if the entire truck will be off the street. Such offstreet loading docks are known as "trailerports" (fig. 5). At the time of this study, four firms in the area had torn down or remodeled buildings to install trailerports. With a trailerport at truckbed height, it is possible to unload directly into the store.

Dealers not having trailerports received trailers at West Street or Pier 26, where merchandise was unloaded onto smaller trucks for delivery to the stores. A group of butter, margarine, egg, and cheese dealers leased part of Pier 26 from the city of New York. On this pier, for a fee, it is possible

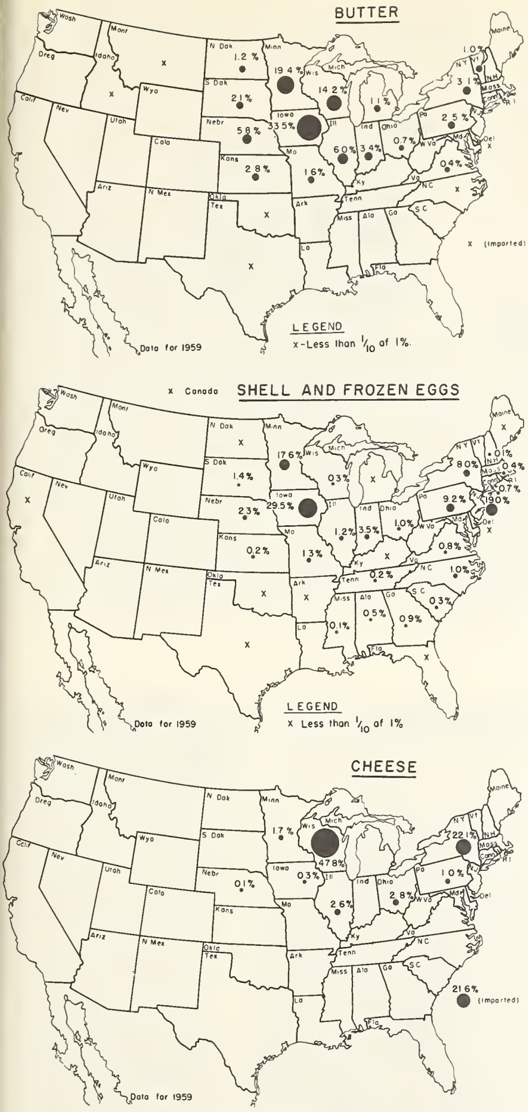

Figure 4.—Sources of butter, shell and frozen eggs, and cheese entering New York City, 1959.

for a tractor and trailer to park for as long as necessary to unload into cartage trucks. The fees received in 1960 met the expenses of renting and operating the pier.

Operations of the Dealers

Space, Buildings, and Valuations

A recent study by the Downtown-Lower Manhattan Association of all buildings between Canal Street and the Battery indicated that 88 percent have been standing 44 years or more, and that 32 percent were 100 years old or older. Only 16 percent were of fireproof construction.[5]

Within the 11 blocks occupied by the butter, margarine, egg, and cheese dealers, there was a total of 556,511 square feet of ground area inside the building lines, of which 47 percent was occupied by these dealers. The total value of the land and buildings in this area, in 1960, was over $13.7 million, or $24.77 per square foot. Of this total, the buildings were valued at $5.5 million, or $9.95 per square foot, and the land at $8.2 million, or $14.82 per square foot. Within the 11-block area, land values ranged from $12.25 to $20.95 per square foot. The range in value of the buildings was even greater, from $4.36 to $17.28 per square foot. In most cases, the higher valued land and buildings were occupied by firms that were not butter, margarine, egg, or cheese wholesalers.

All 108 butter, margarine, egg, and cheese dealers in the Lower Manhattan market area used 950,377 square feet of floor space on all floors in 1961, or about 8,800 square feet per dealer. Distribution of this space by locations may be seen in table 2 and figure 6.

The dealers used about 12 percent of their total space for coolers at 30° F. or above. This amount did not include the air-conditioned area in egg-packing operations, for which the lowest possible temperatures were 60°–70° F. It did include the cheese storage operations where minimum possible temperatures were around 35° F., even if normal operating temperatures ranged in the 60's. About 2 percent of the total space was freezer space, with temperatures of zero or below. Other space utilization included 6 percent for offices, 7 percent for processing, 14 percent for shipping and receiving, 2 percent in sidewalks and platforms used for loading and unloading, and the remaining 57 percent for miscellaneous operations and general storage. A detailed breakdown of space utilization appears in table 3. Although the various dealers had differing space utilizations, there were no significant differences between dealers handling different products. The volume handled by a particular dealer made more difference than the kind of commodity handled.

Various dealers occupied buildings ranging from one to nine stories. Unlike fruit and vegetable dealers in the area, butter, margarine, egg, and cheese dealers usually used all floors they occupied. Only 25 percent of the space used was on the first floor, while 26 percent was on the fourth floor and above.

In general, the buildings used were not designed for the operations being conducted in them. In most instances, they were over 50 years old, and in at least one instance, over 100 years old.

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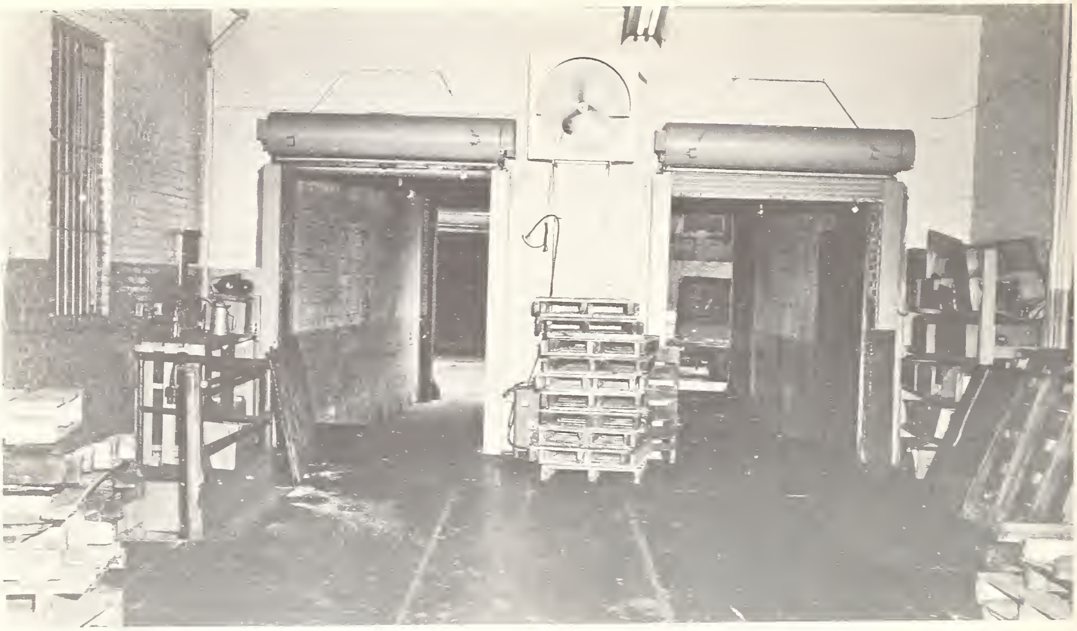
[5] Downtown-Lower Manhattan Association, Inc. Lower Manhattan, 1st Rpt. Recommended Land Use. Redevelopment Areas and Traffic Improvement. 48 pp. Illus. 1958.



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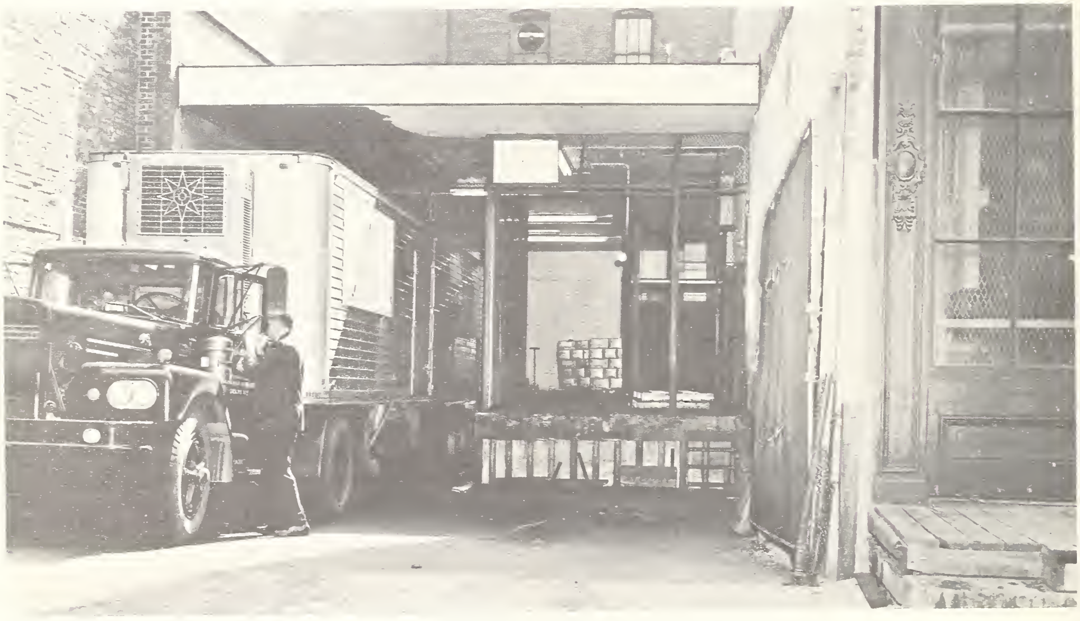

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Figure 5.—Interior and exterior views of a trailerport in New York City.

TABLE 2.—*Floorspace used by wholesale butter, margarine, egg, and cheese dealers, Lower Manhattan market area, New York City, 1961*

Location	Space used	Average per dealer
	Square feet	*Square feet*
Basement	160, 287	1, 484
First floor	239, 445	2, 217
Second floor	163, 256	1, 512
Third floor	115, 472	1, 069
Above third floor	250, 179	2, 316
Sidewalk and platform	21, 738	201
Total space used	950, 377	8, 800

Operations in these buildings are handicapped by being on several stories. Therefore, even though most dealers handling large volumes had palletized operations, full efficiency could not be realized. Conveyors between floors were not used extensively because of fire regulations. Although most dealers believed that the Lower Manhattan area was conveniently located, they objected to the old buildings, to operating in several buildings, and to the general difficulty of getting trucks into and out of the area.

Although a few stores had front entrances on one street and rear entrances on another, the backs of most stores were built solidly against the walls of adjacent buildings. Most stores had neither a rear entrance nor a truckbed-height loading dock. In several instances, stores had loading platforms 12 to 24 inches high on the sidewalks.

To have reasonably efficient facilities, dealers had found it necessary to renovate the buildings that had been constructed for other uses. In such renovations, some firms were quite ingenious in adapting to their present needs; others did little.

TABLE 3.—*Utilization of space by wholesale butter, margarine, egg, and cheese dealers, Lower Manhattan market area, New York City, 1961*

Usage	Space used	Average per dealer
	Square feet	*Square feet*
Cooler	112, 211	1, 039
Freezer	15, 067	140
Office	55, 800	517
Processing	66, 768	618
Shipping and receiving [1]	133, 724	1, 238
General storage and operations, miscellaneous	545, 069	5, 047
Sidewalk and platform	21, 738	201
Total	950, 377	8, 800

[1] Not including platforms.

Many dealers in the Lower Manhattan market area had refrigerated rooms for which a public cold storage warehouse provided brine refrigerant. Users of this brine service were under notice that such service would be suspended July 1, 1961. Therefore, at the time of the study, these dealers were installing their own refrigeration equipment.[6]

Ownership of Facilities

Information was obtained from butter, margarine, egg, and cheese dealers on ownership or rental of the buildings they occupied. In some cases a company owned not only its own building but also buildings in which other wholesalers operated. In other cases, the business was owned by a family, while the building was owned by an elder member of the family. In such cases, it was assumed these companies owned their facilities, although technically that was not so. In some cases, buildings owned by one merchandising company or associated family were being used by other merchandising companies. In such instances, it was assumed that the occupying companies were renting.

Of the butter, margarine, egg, and cheese firms, 18 owned the facilities they occupied, and the remaining 90 dealers rented. Those owning their buildings handled about 46 percent of the total tonnage.

The Traffic Situation

The traffic difficulties in the area of Lower Manhattan are generally regarded as being almost as bad as in midtown Manhattan. There are delays for both incoming and outbound trucks. On occasions when the Holland Tunnel is congested, these delays may reach 3 or 4 hours. Such delays, however, are a product of general traffic conditions, and cannot be attributed to the butter, margarine, egg, and cheese dealers.

In the Washington Street fresh fruit and vegetable marketing area in 1956, over 1,000 vehicles parked per hour between 10 p.m. and 2 a.m. During these hours, it would be extremely difficult to reach the stores of the butter, margarine, egg, and cheese dealers. However, their operating hours are such that they are busiest when there is little activity by the fresh fruit and vegetable dealers. Because of the hours in which the butter, margarine, egg, and cheese dealers operated, they had no appreciable traffic delay within the market area. If they had operated between 5 p.m. and 7 a.m., traffic delay would have been a major consideration.

Number and Types of Dealers

Some of the 108 dealers in the area specialized in one product, such as shell eggs or cheese, although most of them handled various combina-

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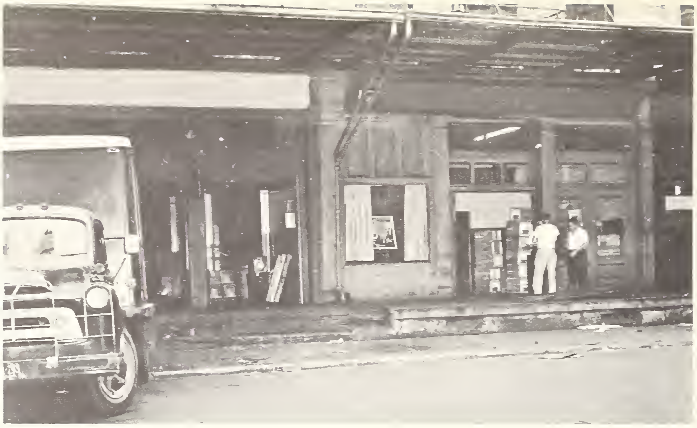
[6] Brine refrigerant service was subsequently suspended as scheduled.



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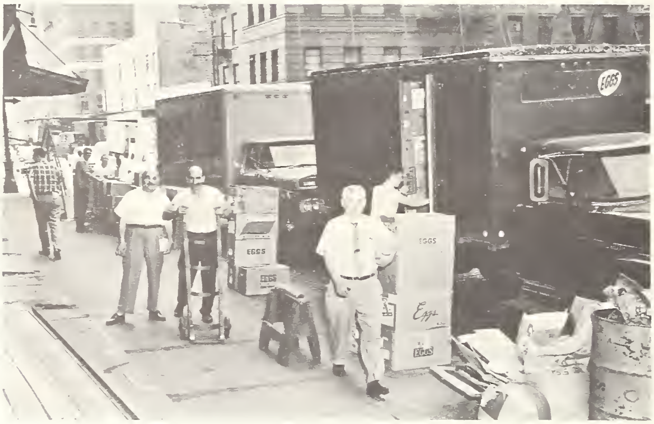

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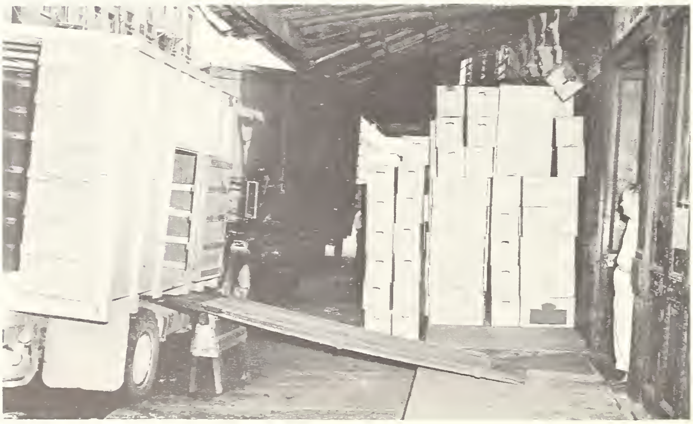

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FIGURE 6.—Butter, margarine, egg, and cheese facilities in Lower Manhattan. Figure 6–A, on the next page, shows skyscrapers in the market area.

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FIGURE 6–A.

tions of commodities. Few dealers handled substantial amounts of commodities other than butter, margarine, shell eggs, frozen eggs, and cheese, although some did handle canned goods or other miscellaneous merchandise as secondary lines.

To make it easier to understand their operations, dealers were categorized by what they handled. There were 24 dealers handling all four of the commodities; 16 handling butter, margarine, and eggs; 8 handling butter, margarine, and cheese; 36 handling only eggs; and 24 handling only cheese.

Of course, the operating methods of these dealers varied widely. Some dealers were primarily speculators who bought and sold futures or "spots" and hoped to make money from price fluctuations; they maintained facilities only because they occasionally needed an outlet or source of supply to satisfy an uncovered contract. Others had regular outlets for their products, and hedged or speculated for protection or additional income. Some had trademarks for their regularly distributed products. Some, especially cheese dealers, were primarily importers, and some primarily jobbers. Regardless of the function a dealer performed, his facilities were geared to the products he handled, rather than to his function.

Volume Received in the Lower Manhattan Market

Flow Into the Area

In 1960, the 108 dealers in the area had direct receipts of 317,538 tons of butter, margarine, eggs, cheese, and other products. This volume was determined by interviewing all the dealers and examining records of a selected sample. The total included 40,027 tons of butter, 7,134 tons of margarine, 236,002 tons of eggs (or 10,498,000 cases, assuming 45 pounds to the case), 34,066 tons of cheese, and 309 tons of miscellaneous products. In addition, 58,158 tons were bought from other New York City dealers. The approximate wholesale value of the commodities was $712 per ton. The 375,696 tons handled (including indirect receipts) had a total value of about $267 million.

A total of 19,958 tons was received by railroad. Since none of the dealers had rail spurs at their stores, that entire volume had to be carted from the various railroad team tracks or delivered directly to retailers without going through the stores. Most receipts arrived at New Jersey team track yards or New York Central's 30th Street yards and were trucked from these points. A total of 15,966 tons was hauled from these and other yards to the dealers' stores. The remaining 3,992 tons were distributed directly to retail customers from the team tracks.

Most of the receipts, 290,264 tons, arrived by truck. The large over-the-road trucks that did not go to trailerports ordinarily unloaded on Pier 26 or West Street. A total of 86,876 tons was carted from these two areas. An additional 23,478 tons were distributed directly to retail customers from West Street or Pier 26. The remaining volume of truck receipts, including those on the large over-the-road trucks going to trailerports and receipts on smaller trucks legally allowed within the area, comprised the remaining volume, 179,910 tons.

Arrivals at the deep-sea berths along the waterfront area or at the airports totaled 7,316 tons. Air receipts were negligible. Shipments made by Lower Manhattan dealers as brokers to dealers in other parts of the country were not included in this study. Most ship receipts were carted to the dealers' stores.

Dealers who handled all four products—butter, margarine, eggs, and cheese—received 30,390 tons. These 24 dealers (22 percent of all dealers) handled about 10 percent of the total volume. The 16 butter, margarine, and egg dealers (15 percent of all dealers) handled 199,326 tons, or 63 percent of the total volume. The eight butter, margarine,

Table 4.—*Receipts of butter, margarine, eggs, and cheese in Lower Manhattan market, by method of transportation, New York City, 1960*

Type of dealer and products handled	Number of dealers	Rail	Ship and air	Truck	Total direct receipts
	Number	*Tons*	*Tons*	*Tons*	*Tons*
Butter, margarine, egg, and cheese	24				
Butter		260	14	6, 450	6, 724
Margarine		218		3, 810	4, 028
Eggs				18, 832	18, 832
Cheese		12	2	776	790
Miscellaneous				16	16
ALL	24	490	16	29, 884	30, 390
Butter, margarine, and egg	16				
Butter		5, 302	8	14, 951	20, 261
Margarine		875		125	1, 000
Eggs				178, 065	178, 065
ALL	16	6, 177	8	193, 141	199, 326
Butter, margarine, and cheese	8				
Butter		6, 380	46	6, 616	13, 042
Margarine		811		1, 295	2, 106
Cheese		550	7	3, 863	4, 420
ALL	8	7, 741	53	11, 774	19, 568
Egg	36				
Eggs				39, 105	39, 105
Miscellaneous				50	50
ALL	36			39, 155	39, 155
Cheese	24				
Cheese		5, 550	7, 239	16, 067	28, 856
Miscellaneous				243	243
ALL	24	5, 550	7, 239	16, 310	29, 099
GRAND TOTAL	108	19, 958	7, 316	290, 264	317, 538

and cheese dealers (7 percent of all dealers) handled 19,568 tons, or 6 percent of the total volume. The 36 dealers handling primarily eggs (33 percent of all dealers) handled 39,155 tons, or 12 percent of the total volume. The 24 dealers handling primarily cheese handled 29,099 tons, or 9 percent of the total volume. A detailed breakdown of these receipts is shown in table 4.

Flow Within the Area

The 108 dealers actually handled more than the 317,538 tons of direct receipts. They purchased 58,158 tons from other dealers in the New York area. Most of this volume consisted of eggs and margarine. The eggs were purchased from a variety of dealers, including national meatpackers and poultry cooperatives on Long Island. Small amounts of margarine (less than a carlot) were normally purchased from warehouses maintained in New York by the manufacturers. A detailed breakdown of the volume purchased from other New York area dealers is shown in table 5.

In addition to the direct receipts and the volume received from other New York area dealers, there were also movements of products between dealers in the market area. The total handled by more than one Lower Manhattan dealer was 13,595 tons. The practice of "second handling" was fairly general. The types of products handled by a dealer did not seem to influence the amount of second handling.

Flow From the Area

The 108 dealers distributed products throughout a large area. Although different commodities had different distribution patterns, almost 91 percent of the total volume handled was distributed to the metropolitan area. Brooklyn, Queens, and other Long Island dealers received 37 percent; Manhattan dealers, 29 percent; Bronx and Westchester dealers, 17 percent; and New Jersey metropolitan area dealers, 8 percent. Of the total volume, 5 percent went to upstate New York and

TABLE 5.—*Volume available for distribution by the 108 dealers in the Lower Manhattan market, New York City, 1960* [1]

Type of dealer and products handled	Volume of direct receipts	Bought from other New York City dealers	Total volume handled
	Tons	*Tons*	*Tons*
Butter, margarine, egg, and cheese:			
Butter	6, 724	1, 383	8, 107
Margarine	4, 028	396	4, 424
Eggs	18, 832	10, 530	29, 362
Cheese	790	946	1, 736
Miscellaneous	16	46	62
ALL	30, 390	13, 301	43, 691
Butter, margarine, and egg:			
Butter	20, 261	810	21, 071
Margarine	1, 000	25, 070	26, 070
Eggs	178, 065	4, 320	182, 385
ALL	199, 326	30, 200	229, 526
Butter, margarine, and cheese:			
Butter	13, 042	1, 987	15, 029
Margarine	2, 106	163	2, 269
Cheese	4, 420	1, 630	6, 050
ALL	19, 568	3, 780	23, 348
Egg:			
Eggs	39, 105	10, 148	49, 253
Miscellaneous	50	11	61
ALL	39, 155	10, 159	49, 314
Cheese:			
Cheese	28, 856	704	29, 560
Miscellaneous	243	14	257
ALL	29, 099	718	29, 817
GRAND TOTAL	317, 538	58, 158	375, 696
Butter	40, 027	4, 180	44, 207
Margarine	7, 134	25, 629	32, 763
Eggs	236, 002	24, 998	261, 000
Cheese	34, 066	3, 280	37, 346
Miscellaneous	309	71	380
GRAND TOTAL	317, 538	58, 158	375, 696

[1] Does not include 13,595 tons handled more than once within the market.

New England, and 4 percent went in long-distance shipments south and west.

Unlike fresh fruit and vegetable receivers, the butter, margarine, egg, and cheese dealers deliver, or hire cartage companies to deliver, orders to retail outlets. The dealers handling all commodities indicated that they delivered 78 percent of their tonnage; butter, margarine, and egg dealers, 75 percent; butter, margarine, and cheese dealers, 45 percent; egg dealers, 78 percent; and cheese dealers, 54 percent. The flow of the commodities studied through the Lower Manhattan market area is shown in figure 7 and table 6.

Some Costs Incurred in Movement Through the Lower Manhattan Area

The costs shown in this report have been limited to those incurred in the flow from points of initial receipt through the Lower Manhattan market to retailers. These do not include costs to shippers or freight handlers before a commodity arrives in New York City. The cost data presented are limited mostly to those operations subject to improvement by better facilities. Thus, the costs of items such as heat, light,

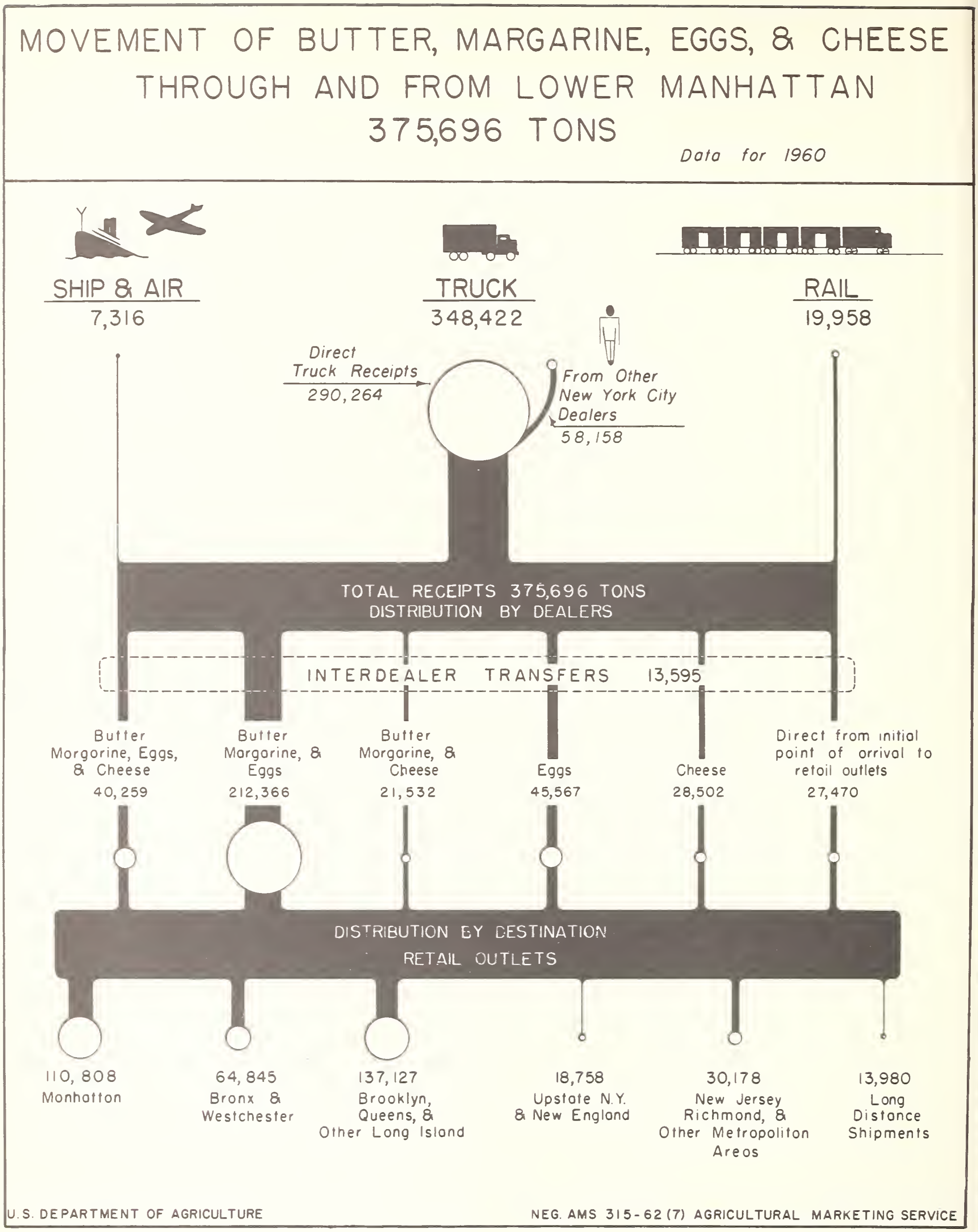
MOVEMENT OF BUTTER, MARGARINE, EGGS, & CHEESE THROUGH AND FROM LOWER MANHATTAN
375,696 TONS
Data for 1960
SHIP & AIR
7,316
TRUCK
348,422
RAIL
19,958
Direct Truck Receipts
290,264
From Other New York City Dealers
58,158
TOTAL RECEIPTS 375,696 TONS
DISTRIBUTION BY DEALERS
INTERDEALER TRANSFERS 13,595
Butter Margarine, Eggs, & Cheese
40,259
Butter Margarine, & Eggs
212,366
Butter Margarine, & Cheese
21,532
Eggs
45,567
Cheese
28,502
Direct from initial point of arrival to retail outlets
27,470
DISTRIBUTION BY DESTINATION
RETAIL OUTLETS
110,808
Manhattan
64,845
Bronx & Westchester
137,127
Brooklyn, Queens, & Other Long Island
18,758
Upstate N.Y. & New England
30,178
New Jersey Richmond, & Other Metropolitan Areas
13,980
Long Distance Shipments
U.S. DEPARTMENT OF AGRICULTURE
NEG. AMS 315-62 (7) AGRICULTURAL MARKETING SERVICE

Figure 7.

TABLE 6.—*Distribution of butter, margarine, eggs, and cheese from the Lower Manhattan market, New York City, 1960*

Type of dealer and products handled	Distributed to—					
	Manhattan	Bronx and Westchester	Brooklyn, Queens, and other Long Island	Upstate New York and New England	New Jersey, Richmond, and other metropolitan areas	Long distance
	Tons	*Tons*	*Tons*	*Tons*	*Tons*	*Tons*
Butter, margarine, egg, and cheese:						
Butter	3, 405	1, 135	2, 919	162	243	243
Margarine	1, 858	620	1, 592	88	133	133
Eggs	12, 332	4, 111	10, 570	587	881	881
Cheese	729	243	625	35	52	52
Miscellaneous	24	8	22	4	2	2
ALL	18, 348	6, 117	15, 728	876	1, 311	1, 311
Butter, margarine, and egg:						
Butter	5, 379	3, 693	8, 540	954	2, 086	419
Margarine	6, 878	4, 793	10, 787	1, 304	1, 785	523
Eggs	47, 420	32, 830	74, 778	9, 118	14, 591	3, 648
ALL	59, 677	41, 316	94, 105	11, 376	18, 462	4, 590
Butter, margarine, and cheese:						
Butter	5, 010	2, 756	4, 409	952	1, 300	602
Margarine	526	186	435	13	1, 019	90
Cheese	1, 936	1, 028	1, 694	303	847	242
ALL	7, 472	3, 970	6, 538	1, 268	3, 166	934
Egg:						
Eggs	17, 238	9, 850	14, 776	3, 448	2, 463	1, 478
Miscellaneous	22	13	17	4	3	2
ALL	17, 260	9, 863	14, 793	3, 452	2, 466	1, 480
Cheese:						
Cheese	7, 971	3, 534	5, 893	1, 749	4, 772	5, 641
Miscellaneous	80	45	70	37	1	24
ALL	8, 051	3, 579	5, 963	1, 786	4, 773	5, 665
GRAND TOTAL	110, 808	64, 845	137, 127	18, 758	30, 178	13, 980
	Total volume by commodity					
Butter	13, 794	7, 584	15, 868	2, 068	3, 629	1, 264
Margarine	9, 262	5, 599	12, 814	1, 405	2, 937	746
Eggs	76, 990	46, 791	100, 124	13, 153	17, 935	6, 007
Cheese	10, 636	4, 805	8, 212	2, 087	5, 671	5, 935
Miscellaneous	126	66	109	45	6	28
GRAND TOTAL	110, 808	64, 845	137, 127	18, 758	30, 178	13, 980

telephone, management, and wages of the office staff are not included. The costs include only the direct costs or charges for handling 375,696 tons of butter, margarine, eggs, and cheese through the facilities of the Lower Manhattan market area in 1960. These costs consist of direct labor costs and fringe benefits paid employees in handling operations; direct costs of operating trucks, and handling costs such as cartage, porterage, and traffic delay; estimated losses from breakage, spoilage, and pilferage because of inadequate facilities and poor handling; and rents. For the purposes of this study, costs have been classified as follows: (1) Costs from first point of arrival to the Lower Manhattan market; (2) costs within the market: and (3) costs between this market and retail outlets.

For such items as handling costs, records of the dealers were used. Cartage and intermarket transfer costs were based on rates charged by cartage companies and were verified by several dealers who used this type of service. Spoilage, breakage, and pilferage were estimated and confirmed by several dealers operating on the market. The rental figures were obtained from records of the dealers. Costs of movement from the market to retail outlets were developed from an analysis of the time required for delivery to various points.

Costs From First Point of Arrival to the Lower Manhattan Dealer

Costs for cartage were incurred between the railroad arrival point in the New York area and the dealers' stores, because there was no rail service into the Lower Manhattan area. Since many large over-the-road trucks were not permitted into the market unless a firm could provide offstreet parking, it was necessary to unload them at West Street or Pier 26. Cartage applies also to ship receipts moved from steamship berths. A total of 15,966 tons, or 80 percent, of the rail receipts were carted from team tracks to the dealers' stores. An additional 86,876 tons, or 30 percent, of the truck receipts arrived at West Street and Pier 26, and were subject to cartage. Almost all of the 7,316 tons arriving by ship was carted to the dealers' stores. A total of 110,158 tons was subject to cartage to the stores. Cartage was also incurred on an additional 58,158 tons bought from local sources. Therefore, the total cartage was for 168,316 tons.

The occasional delay time encountered because of traffic conditions was included in the cartage costs, since cartage rates reflect delay time. In instances where dealers leased trucks, delay time was included. Because of the relatively small amount of time lost, no attempt was made to separate delay time. The main element of delay was the waiting of trailers and delivery trucks to get to a specific area for unloading because a dealer had insufficient loading areas.

For purposes of this study, cartage included the costs of: (1) Loading trucks from railroad cars for delivery to the dealers' stores, and loading from over-the-road trucks parked on West Street, Pier 26, or one of the air terminals; (2) hauling merchandise from these points to dealers' stores; (3) delay time for trucks; and (4) placing merchandise on the tailgate of the truck for unloading at the dealers' stores. Such costs were determined from the records of a statistical sample of dealers. Where cartage companies were employed, the cost was the actual charge paid for cartage. All costs were verified by cartage firms operating in the market.

The cost of cartage and avoidable delay for moving products from the initial point of arrival to the dealers' stores in Lower Manhattan was estimated at slightly more than $1.6 million for the 168,316 tons, including the volume bought from the New York dealers. Details of this computation are shown in table 7.

Costs Within the Lower Manhattan Market Area

The handling costs at the dealers' stores; the interdealer transfer costs; spoilage, breakage, and pilferage; and rents were all part of the measurable costs of moving merchandise through facilities in the Lower Manhattan market. The cost for moving 375,696 tons of butter, margarine, eggs, and cheese through these facilities was approximately $9.7 million.

These estimates cover the following items: (1) Handling costs at the dealers' stores; (2) interdealer transfer costs; (3) spoilage, deterioration, and pilferage; and (4) rental charges paid by dealers, or an estimate of rental value in lieu of rental charges.

Handling Costs at the Stores

The butter, margarine, egg, and cheese dealers did not handle at their stores the 27,470 tons moving directly from the initial point of arrival to retail outlets. The remaining 348,226 tons were handled through the stores. In addition, dealers handled 13,595 tons more than once. Therefore, a total of 361,821 tons was handled by these dealers in their warehouses.

To determine the total cost of this handling within the stores, the records were studied. The results of this analysis were compared to those found in other studies, and were checked for costs of labor as specified by union contracts. At the time of this study, the average wage rate for "chauffeurs" (truckdrivers) was $103 per week, and for porters, $95. In addition, dealers paid fringe benefits of about 12 percent.

Considerable variation in handling equipment was found between the various firms. Some

TABLE 7.—*Cartage and avoidable-delay costs for butter, margarine, eggs, and cheese moving from first points of receipt to the Lower Manhattan market, 1960* [1]

Type of dealer	Receipts		
	Volume	Average cost per ton	Total cost
	Tons	*Dollars*	*Dollars*
Butter, margarine, egg, and cheese	21,575	10.03	216,000
Butter, margarine, and egg	100,616	9.94	1,000,000
Butter, margarine, and cheese	11,612	10.09	117,000
Egg	20,339	10.02	204,000
Cheese	14,174	10.03	142,000
Total or average	168,316	9.98	1,679,000

[1] Includes cartage costs from ships, air terminals, team tracks, West Street, and avoidable-delay time, but excludes volumes not going through dealers' stores.

firms using mechanized equipment had relatively low costs for some handling operations. However, when total cost per firm was computed, much of the laborsaving from efficient operations was lost because merchandise was moved between floors and even between buildings.

The costs of moving 361,821 tons from truck tailgates into the dealers' stores, within the stores, and to the tailgates of delivery trucks totaled $6,691,000, or $18.49 per ton. These costs, by type of dealer, are shown in table 8.

TABLE 8.—*Handling costs for butter, margarine, eggs, and cheese moving through facilities of dealers in Lower Manhattan market, 1960*

Type of dealer	Receipts		
	Volume[1]	Average cost per ton	Total cost
	Tons	*Dollars*	*Dollars*
Butter, margarine, egg, and cheese	41, 689	21. 06	878, 000
Butter, margarine, and egg	216, 886	18. 65	4, 046, 000
Butter, margarine, and cheese	22, 487	16. 59	373, 000
Egg	51, 207	17. 87	915, 000
Cheese	29, 552	16. 21	479, 000
Total or average	361, 821	18. 49	6, 691, 000

[1] Volume includes the amount handled through the dealers' stores, total volume handled plus the volume of interdealer transfers, minus the volume of shipments from points of initial receipt to retailers.

Interdealer Transfer Costs

The movement of butter, margarine, eggs, and cheese between dealers located in the Lower Manhattan market consisted of transfers of receipts from large-volume receivers to small jobbers, and occasional fill-in orders by the large dealers. Generally, the smaller dealers either graded, further processed, or reduced to smaller quantities the merchandise received. In many cases, small dealers used the large holding capacity of larger dealers. The method of transferring merchandise varied from use of a two-wheel handtruck pushed down the street (fig. 8) to hauling in a large refrigerated truck.

Computation of the costs of interdealer transfers was based upon the costs of a sample of dealers and checked against cartage rates. The costs of moving the 13,595 tons subject to interdealer transfer, not including the cost to the dealer for handling within his store, totaled $110,000. The costs of interdealer transfers by type of dealer are shown in table 9.

Spoilage, Deterioration, and Pilferage

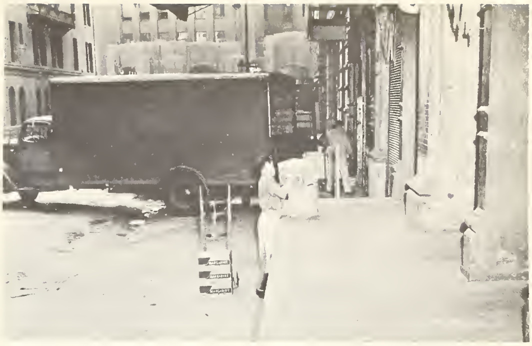

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FIGURE 8.—A method of interdealer transfer.

TABLE 9.—*Interdealer transfer costs for butter, margarine, egg, and cheese dealers in Lower Manhattan, 1960*

Type of dealer	Volume handled	Average cost per ton	Total cost
	Tons	*Dollars*	*Dollars*
Butter, margarine, egg, and cheese	1, 430	8. 39	12, 000
Butter, margarine, and egg	4, 520	8. 19	37, 000
Butter, margarine, and cheese	955	7. 33	7, 000
Egg	5, 640	8. 16	46, 000
Cheese	1, 050	7. 62	8, 000
Total or average	13, 595	8. 09	110, 000

Complete loss of a product due to spoilage and deterioration was reduced to a minimum by the dealers' extensive use of alternative outlets. Examples of this are the disposal of cracked eggs to an egg-breaking firm for freezing and the sale to rendering firms of butter which fails to "meet grade." However, losses due to pilferage were higher than normal because the multistory facilities prevented adequate controls. Loss from spoilage, deterioration, and pilferage was estimated by the dealers at one-half of 1 percent of the total volume, or about $1,320,000 (table 10).

TABLE 10.—*Loss from spoilage, deterioration, and pilferage for butter, margarine, egg, and cheese dealers in Lower Manhattan, 1960*

Type of dealer	Total cost
	Dollars
Butter, margarine, egg, and cheese	150, 000
Butter, margarine, and egg	790, 000
Butter, margarine, and cheese	80, 000
Egg	190, 000
Cheese	110, 000
Total	1, 320, 000

Rental Charges

The rental data for the firms in the market were collected by personal interview and verified by examination of selected dealers' records. When the dealer owned the facilities, an equivalent rental value was estimated for similar facilities in the area. The total rental was $508,100, or an average annual rental of $4,705 for the 108 firms (table 11).

TABLE 11.—*Rental or occupancy charges for present facilities for butter, margarine, egg, and cheese dealers in Lower Manhattan, 1960*

Type of dealer	Volume handled	Yearly rental, all dealers
	Tons	*Dollars*
Butter, margarine, egg, and cheese	43, 691	129, 300
Butter, margarine, and egg	229, 526	61, 500
Butter, margarine, and cheese	23, 348	52, 300
Egg	49, 314	114, 500
Cheese	29, 817	150, 500
Total	375, 696	508, 100

Costs Between Lower Manhattan and Retail Outlets

The butter, margarine, egg, and cheese dealers normally used cartage companies to deliver their merchandise. In some cases, the cost was paid by the sellers, and in others by the buyers. Some dealers owned or leased trucks, supplying their own trucks and crews. Customers picked up 22 percent of the volume at the dealers' platforms.

For cartage companies that delivered the products, actual rates were used in computing costs. Where delivery was made to the customer directly from the point of initial receipt, the extra cost of having a man inside the car was added to the cartage rates. In situations where privately owned or leased trucks were used, the delivery costs were computed by determining: (1) The time to drive from Lower Manhattan to central points in each of the distribution areas; (2) the average cost per hour to operate various types of trucks, including the drivers' wages with fringe benefits; and (3) the average size of load hauled from the wholesale store to the unloading points.

Details of the distribution costs appear in table 12. Relatively low costs per ton were found for the industry, because the normal delivery pattern included fully loaded trucks moving along fairly set routes.

For deliveries outside metropolitan New York, costs were calculated only as far as the New York metropolitan area boundary. The total cost of distribution to all points from the Lower Manhattan market was approximately $3.2 million for the 375,696 tons.

TABLE 12.—*Costs of movement of butter, margarine, eggs, and cheese from point of sale in Lower Manhattan to retail outlets* [1]

Distribution point	Volume	Average cost per ton	Total cost
Metropolitan area:	*Tons*	*Dollars*	*Dollars*
Manhattan	110, 808	7. 01	777, 000
Bronx and Westchester	64, 845	10. 19	661, 000
Brooklyn, Queens, and Long Island	137, 127	10. 20	1, 399, 000
New Jersey, Richmond, and other metropolitan areas	30, 178	8. 48	256, 000
Other outlets:			
Upstate New York and New England	18, 758	4. 64	87, 000
South and west [2]	13, 980	4. 58	64, 000
Total or average	375, 696	8. 63	3, 244, 000

[1] Including delay time where applicable.

[2] To edge of New York metropolitan area.

Summary of Costs Incurred in Movement Through the Lower Manhattan Area

The total cost for carting 168,316 tons of butter, margarine, eggs, and cheese to the Lower Manhattan market, handling 361,821 tons through the market, and distributing 375,696 tons from the dealers' stores and points of initial receipt to the retail outlets was about $13 million (table 13).

These costs exclude the buying time required by local jobbers, out-of-town jobbers, or retail buyers from the metropolitan area. They also exclude the cost of management of the individual stores, and operating expenses such as heat and light.

TABLE 13.—*Summary of costs of distribution of butter, margarine, eggs, and cheese from points of initial receipt through Lower Manhattan market to retail outlets*

Cost item	Total cost
	Dollars
Cartage	1, 679, 000
Handling	6, 691, 000
Interdealer movement	110, 000
Spoilage, deterioration, and pilferage	1, 320, 000
Rentals	508, 000
Distribution costs	3, 244, 000
Total	13, 552, 000

Inadequacies of Facilities and Operations

The largest single item of cost of marketing through the facilities of the Lower Manhattan market was the $6.7 million cost of handling within the stores. The expense was due, in major part, to the use of multistory, inefficient facilities, although in many cases handling methods were the best available, considering the type of facility. Another major item of cost was cartage, attributable to the lack of rail sidings and proper facilities for unloading trucks. Although much has been done with trailerports, the cartage from trucks unable to unload at the dealers' stores still represents a major cost.

Many of the difficulties of the butter, margarine, egg, and cheese dealers in Lower Manhattan are attributable to the location. These inadequacies and the difficulties of operation have been stated in the earlier fruit and vegetable market study mentioned before. Facilities and operating difficulties of these dealers, when compared to those of the fresh fruit and vegetable dealers, are less seriously defective. However, when present conditions are compared to conditions possible in New York, and achieved in modern wholesale food centers, they are highly inadequate.

Various firms in the butter, margarine, egg, and cheese industry have realized that they can no longer operate under less than optimum conditions if they are to meet or surpass their competition. These firms have used great ingenuity in achieving efficient layouts and have adapted their operations to mechanical handling equipment. Four dealers have taken advantage of the offstreet unloading provisions of the New York Code by demolishing or remodeling adjoining buildings and constructing trailerports. Each of these dealers reported his investment in his trailerport was returned from lower cartage and unloading costs in a relatively short time.

However, a firm is limited in achieving an efficient layout, especially in multiple-story facilities, even with the best handling equipment. It is expensive to lift a ton of merchandise as high as nine stories, especially in a single slow, weight-restricted elevator. Even when an over-the-road truck can be efficiently loaded and unloaded in Lower Manhattan, it still is delayed by New York traffic. Similarly, trucks delivering merchandise to retailers must contend with traffic to and from the market, and often within it.

Although not generally recognized, one real difficulty is that this market, as well as the old fresh fruit and vegetable marketing area, is in a location with higher alternative uses. In short, wholesale marketing areas can no longer economically compete for land near large skyscrapers. A hundred years ago it was necessary for wholesale dealers in food to be in central locations so that retailers using horses and wagons could get the day's supplies. At that time, wholesale markets provided one of the best uses of property. Such markets required a harbor, so that ships might unload, and needed to be close to the "downtown" area because of their customers' locations, and close to similar dealers to provide a good variety of foods. For such prime locations, wholesalers of that era expected to pay high rents. In the last 100 years, many technical changes have occurred. Small ships no longer deliver much of the merchandise, retail stores have moved to the suburbs, the "downtown" population has become a relatively smaller part of the city, and refrigeration and transportation improvements have enabled one dealer to provide a wide selection of foods.

For these reasons and others, solution of the problems encountered by the butter, margarine, egg, and cheese dealers in Lower Manhattan requires the best currently available research. Almost any heavy handling operations are most efficient in one-story buildings with adequate loading and unloading platforms, research has shown. It is also desirable to have a good flow of foods within a dealer's store, adequate streets to minimize traffic congestion, and enough parking to maximize movement of goods over the platforms and to provide employee parking.

HOW THE MARKET FACILITIES CAN BE IMPROVED

Kind and Amount of Facilities Needed

It is obvious that these dealers in a new location would require more land than is presently used. Individual action by single dealers would decentralize the market and increase the difficulty of operations. If the dealers were to combine forces, their new facilities probably would cost less than if they were to construct individual facilities. This is even more probable if urban renewal causes a large number of dealers to be displaced about the same time.

Because a large amount of land would be required, the land should be reasonably priced. For this reason, if the butter, margarine, egg, and cheese industry were to relocate, it would probably be in an area at some distance from the present Lower Manhattan site. In addition, it is probable that, with urban renewal, an industry making more intensive use of the present market area and needing large numbers of employees might be encouraged for this area. The various alternatives are discussed in the rest of this report.

Consideration should be given to incorporating the butter, margarine, egg, and cheese dealers into a food distribution center. The city of New York is constructing wholesale fresh fruit and vegetable marketing facilities at Hunts Point in the Bronx. At the time this report was written, authorities in New Jersey were developing plans for wholesale food-handling facilities. Since it is probable that any movement of the butter, margarine, egg, and cheese dealers would be to one or both of these locations, various service features are excluded from this report. However, if these dealers were to relocate independently, plans would need to include space for a bank, a telegraph office, brokers, and other service features already planned for the fresh fruit and vegetable market.

New York Mercantile Exchange

Although the New York Mercantile Exchange has been used extensively by various members of the butter and egg industries, estimates for moving the exchange are not included in this plan. According to officials of the exchange, the volume of butter and eggs traded on the exchange is becoming less each year. Other commodity volumes, such as potato futures, are increasing. The exchange management has sponsored a new exchange for trading stocks and bonds. With this expansion, the exchange will have largely divorced itself from its traditional reasons for its physical location with the butter and egg wholesalers.

Officials of the exchange negotiated with the New York Port Authority for inclusion in the proposed World Trade Center in Manhattan. The American Stock Exchange and the New York Stock Exchange also were negotiating for inclusion in the World Trade Center.

Facilities for Butter, Margarine, Egg, and Cheese Dealers

Plans developed for new facilities for those dealers studied should remedy the defects of their present facilities. The individual needs of each wholesaler have been studied and his requirements determined. Some dealers handled small volumes of lightweight merchandise, with little processing or handling, while others handled heavy products, with considerable processing and handling. To complicate the facility situation further, some dealers handled all commodities, and some did extensive processing.

The most desirable type of construction would be multiple-occupancy buildings, each of which would house several firms. Multiple-occupancy units have the advantage of providing low-cost structures with high versatility. Such structures require less land than single-occupancy structures and provide convenience for intramarket transfers and buyer inspection.

If present operations should change, these multiple units could be adapted to meet new requirements. If, eventually, there were fewer dealers, each handling a greater volume, they might expand into vacated units. The multiple-occupancy units are versatile also in that they can be adapted to various nonfood warehouse operations, since the basic principles of merchandise handling are similar. For these dealers' operations, multiple units have been found to offer the most for the least cost.

The size of the standard unit should be such that it would meet the needs of a small wholesaler, while two or more units would meet the requirements of a larger dealer. An analysis indicated that units 25 feet wide and 100 feet deep would be satisfactory. The 100-foot depth would provide for a 14-foot platform in the front and rear, with 70 feet of interior building space, plus the walls. These units should have not less than 18 feet of clearance under the roof supports and lights, with a total ceiling height of at least 20 feet. A mezzanine at the front of the building, 17 feet deep, to correspond with spacing of the interior support columns, would provide space for offices, storage, or light processing.

These units would have continuous platforms and floors on the same level. The front and rear platforms should be at truckbed height, or about 45 inches high. Although there would be some railroad car unloading at the rear platform, the volume arriving by rail has been such that more consideration should be given to the needs of trucks. A wooden bumper about 6 inches by 8 inches should be fastened to each platform to protect it from damage by trucks. A continuous step along the front platform, about half the height of the platform and at least 24 inches wide, would accommodate small trucks, and also pedestrians stepping up to the platform.

Individual wholesalers may wish to lease two or more units, so removable partitions and as few columns as possible, consistent with economy in construction, should be used. Column spacing in these partitions would probably be about 17 feet on center. The mezzanines should be located at the front of the store units, because the order assembly area, normally at the front of the unit, would have little need for a ceiling 18 feet high. The full ceiling height would be advantageous for other operations. Other areas would have height adequate for multiple stacking of pallets.

All floors and platforms on the first-floor level should be concrete with nonskid surfaces, and be sloped to the drains. Heat would be provided by gas or electric space units.

No two of the 108 dealers studied had identical refrigeration facilities. This was due largely to the varying requirements of the individual dealers. Therefore, each dealer should provide his own refrigeration equipment in new facilities. If the individual dealers supply their own, some may be able to use their present equipment. The cooler and freezer floor level should be at the same height as the floor of the rest of the unit.

Each store unit of the dimensions suggested would contain 1,750 square feet of first-floor enclosed space, 425 square feet of mezzanine space, and 700 square feet of platform space, for a total of 2,925 square feet, including 50 square feet of floor space in the end walls.

Present operations of the 108 dealers would require about 200 multiple-occupancy units, including 1 unit used as a restaurant. The 199 units for the butter, margarine, egg, and cheese operations would contain 582,075 square feet of space. This is a reduction of about 39 percent from the space now occupied. The reduction should be more than offset by the increased efficiency possible in the proposed units. The space suggested for each product group is shown in table 14.

Since all units would be similar, it would not be necessary to restrict dealers handling related product lines to any single area of the market. *The only limitation would be in the total number of units, for which responsible dealers should sign firm leases prior to construction.*

Slight deviations from these specifications would not be objectionable if the tenants felt that the modifications would enable them to improve operating efficiency. The suggested plan for a typical unit is shown in figure 9.

The suggested 199 units for the dealers, handling 375,696 tons per year, indicates that these dealers would handle slightly less than 1,900 tons per unit per year. By comparison, recommendations for the fresh fruit and vegetable dealers indicate that those dealers would handle about 6,500 tons per unit,[7] and recommendations for the 14th Street area meat and poultry dealers, in a new wholesale food center, indicate that they would handle about 4,250 tons per year per 25-foot unit.[8]

There appears to be a considerable difference between dealers' volumes handled per unit. However, the products differ and require different handling procedures. Butter, margarine,

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[7] Assuming 110,950 carlots weighing 14 tons each to be handled in 240 units 25 by 100 feet.

[8] Volume and space are as suggested for the 14th Street meat and poultry dealers, in a report recently issued.

TABLE 14.—*Comparison of existing and proposed space in the butter, margarine, egg, and cheese section of a wholesale food center, New York City*

Type of dealer	Present facilities		Proposed facilities		Reduction
	Total	Average per dealer	Total	Average per dealer	
	Square feet	*Square feet*	*Square feet*	*Square feet*	*Percent*
Butter, margarine, egg, and cheese	75, 854	3, 160	46, 800	1, 950	38
Butter, margarine, and egg	186, 846	11, 677	137, 475	8, 592	26
Butter, margarine, and cheese	157, 468	19, 683	117, 000	14, 625	26
Egg	175, 156	4, 866	117, 000	3, 250	33
Cheese	355, 053	14, 794	163, 800	6, 825	54
Total or average	950, 377	8, 800	[1] 582, 075	5, 390	39

[1] Not including the restaurant.

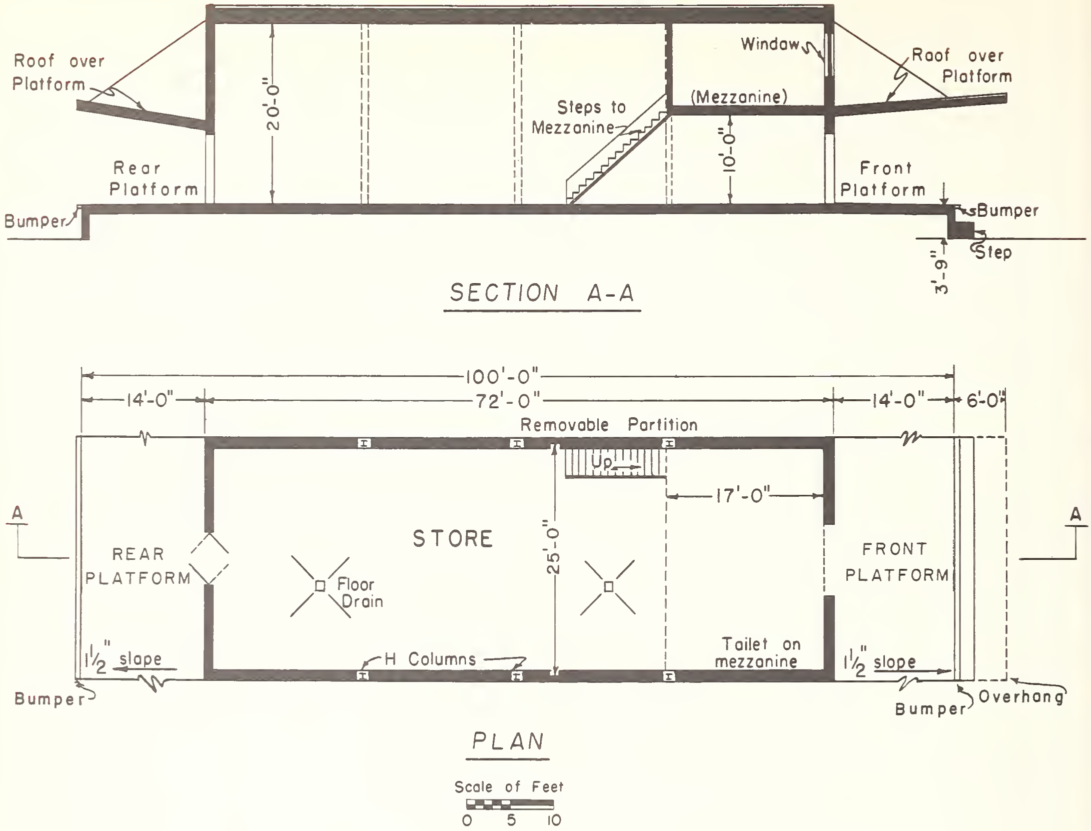


Figure 9.—Plan for a single multiple-occupancy store.

eggs, and cheese, for example, may be stored for long periods while some of the other products cannot.

Some products are such that added value accrues with further processing, such as cutting foods into smaller units, and printing butter. The value of cheese increases when the blocks are cut into sizes for consumer packages. Similarly, butter in the standard 60-pound box is not nearly as salable as when printed into 4-ounce trademarked sticks. It is primarily because of these factors, including slow turnover, processing, packaging, and product identification, all of which increase the value of the product, that the butter, margarine, egg, and cheese dealers require substantially more space than is needed by the other types of dealers.

Rail Connections to Stores

Rail connections should be provided to each store building. Because these dealers received little by rail, only 19,958 tons, a single track has been planned at the rear platform. To make the best use of the track, volume receivers by rail should be scattered throughout the area and not concentrated in one building. If these facilities are built as part of a food distribution center, dealers might have additional team-track yards available for any peak requirements.

Railroad tracks at the rear platform do not preclude the use of the rear platform for unloading trucks. For this reason, and so that the area may be more easily cleaned, the streets at the rear of the stores should be paved between and level with the top of the rails.

Streets and Parking

The width of major streets of the proposed market area depends upon the uses of the streets. All parking at the buildings should be at right angles to the platforms to facilitate loading. Where two rows of buildings face the same market street, the street should be at least 200 feet wide, to permit parking of trucks diagonally in the center and at right angles to the front and rear platforms of the buildings, and still leave sufficient space for flow of traffic. Streets at the rear of the buildings also should be at least 200 feet wide to provide access for over-the-road trucks. Access and cross streets should be at least 60 feet wide to facilitate moving into and out of the market area. Each street should be paved to carry heavy traffic and be well drained.

Convenient parking spaces should be provided for inbound trucks that are not ready to unload, for buyers' cars, outbound trucks that are not ready to load, and the vehicles of the dealers and their employees. The parking areas should be as near the buildings as possible, but should not block market streets or loading and unloading areas. *Land for parking in a market is just as important to the market operation as land for the buildings.*

If operations in the new market were similar to those in the present location, approximately 1,100 parking spaces, excluding loading space at front and rear platforms, would be needed. The 1,100 parking spaces were determined from an analysis of traffic space utilization in the present market. Each parking space is assumed to be 10 feet wide and 25 feet deep, or about the size of most market vehicles. Larger trucks and trailers could use two or more spaces.

Other Facilities and Services

A restaurant would be needed to serve people in the area. As a part of the lease, the restaurant could be required to maintain public restrooms. Such a requirement would avoid the need for separate public restrooms and the supervision they require.

If the butter, margarine, egg, and cheese facilities were not built as part of a food distribution center, it would be desirable to include additional facilities, such as a bank, telegraph office, brokerage offices, gasoline and truck repair service station, offices for market management, and various other facilities.

Total Land Area Needed

In selecting a market site, acquisition of land for later expansion of butter, margarine, egg, and cheese facilities should be considered. In other cities where new wholesale food-handling facilities have been built, dealers not initially included and allied types of dealers have gravitated to the new market areas. In many instances, tenants on the new markets have soon needed more space to handle their business. In some cases, expansion can be achieved by reassigning units no longer needed by the original dealers. However, in most cases, this would prove insufficient. Therefore, it is desirable to acquire, at the outset, sufficient land for expansion. In the plan developed in this study, expansion by about 41 units has been provided, including 2 single-occupancy buildings.

To accommodate the facilities described and leave 25 percent of the acreage for expansion, a site of about 80 acres would be required. This compares with about 31 acres used in the present market.

Arrangement of Facilities

In this plan, 200 multiple-occupancy units have been arranged in 7 buildings. These buildings are located on the major market street, facing each other. The buildings nearest to major cross streets have 32 or 34 units each, while units in buildings farther from the main cross streets have 25 units per building. The remaining 18 units are part of a building which could be expanded. The expansion area completes a rectangle. The two single-occupancy buildings planned in the expansion area would be adjacent to, but not within, the area reserved for multiple-occupancy units. Including the 20 acres for expansion, the area would total 80 acres. Within the area, there would be a single railroad spur behind each building. Other facilities include about 200 parking spaces in the center of the market street and about 900 spaces in double and single rows behind the units. The restaurant would be adjacent to the main access street.

Facilities described in this report are part of a layout for a complete food distribution center, and should be adjusted to tie in with other facilities. Facilities have been planned also on two sites to be discussed later in this report. Possible arrangements on either of two sites are shown in figures 11 and 12.

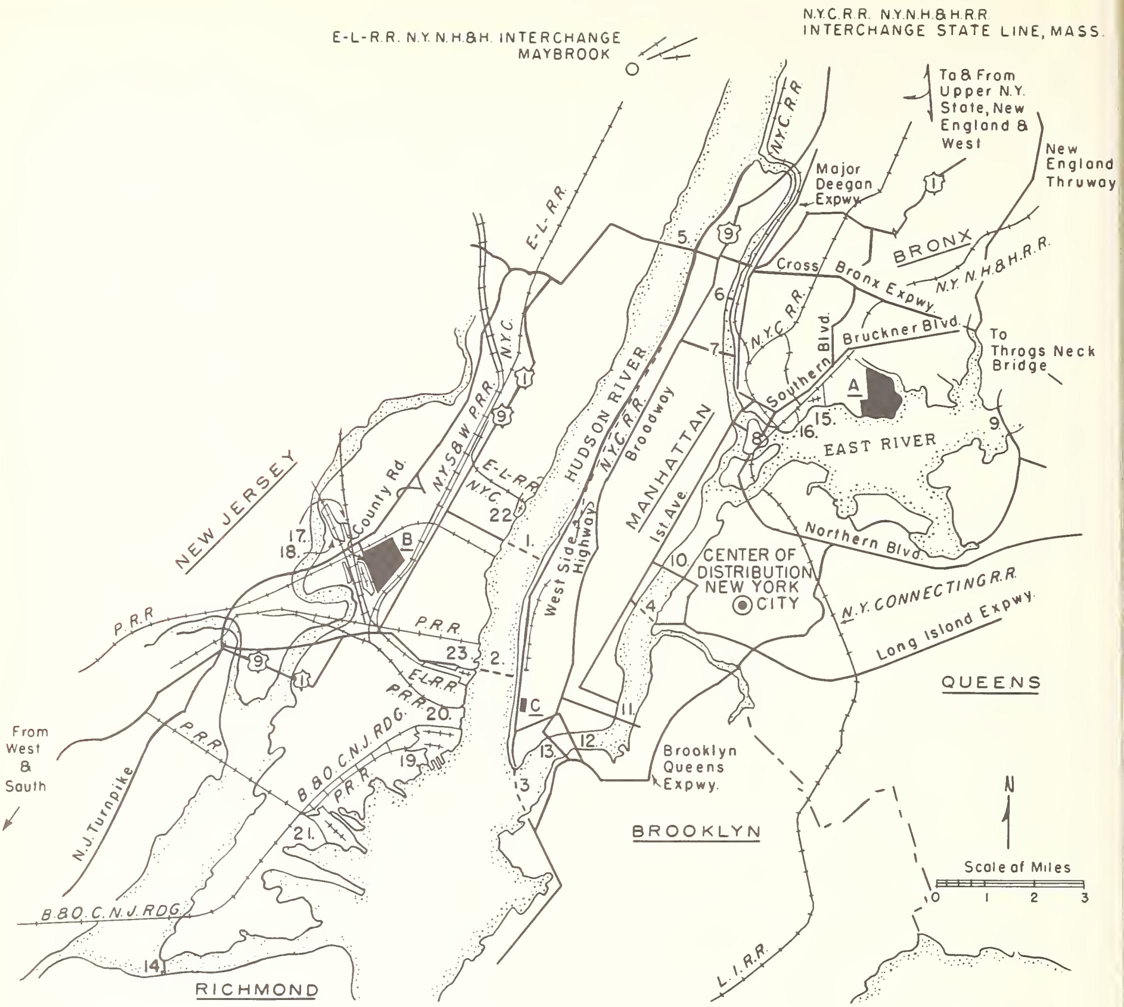
A master plan for the complete facility should be prepared and adopted at the outset, so that the first buildings to be constructed would be in compliance with further development of the food center.

Selecting a Site for a New Market

The proposed site of 80 acres is about 2½ times the present acreage. Such an expansion would be necessary to provide the facilities heretofore described.

A detailed discussion of the principal factors to be considered in locating a new market appears in *New York City Wholesale Fresh Fruit and Vegetable Markets, U.S. Department of Agriculture, Marketing Research Report No. 389.* As stated in that report, the main factors to be considered are (1) distance to retail outlets, (2) direction of major population growth, (3) land area required and the costs, (4) accessibility of public utilities, (5) present land use and topography, (6) importance to the city, and (7) how a site would fit into a city master plan.

Most of the basic considerations have not changed. Of particular importance is the center of distribution, which in 1956 was about 3 miles south of the northern tip of Queens, 2 miles east of the East River, and 1½ miles north of the center of population. Similar computations for butter,



LEGEND

TUNNELS

1. Lincoln
2. Holland
3. Brooklyn Battery
4. Queens Midtown

BRIDGES

5. George Washington
6. High
7. 149th Street
8. Triborough
9. Whitestone
10. Queensboro
11. Williamsburg
12. Manhattan
13. Brooklyn
14. Bayonne

R.R. FREIGHT TERMINAL YARDS

15. Oak Point
16. Port Morris
17. Croxton
18. Secaucus
19. Communipaw
20. Jersey City
21. Greenville
22. Weehawken
23. Povonia

SITES

- A Hunts Point
- B Jersey City
- C Lower Manhattan Market Area

Figure 10.—Locations of possible wholesale food center sites relative to the present location.

margarine, egg, and cheese dealers indicate their center of distribution is in this approximate area, about one-half mile closer to Manhattan.

The earlier report evaluated five possible sites. Of the five originally evaluated, only Hunts Point in the Bronx and Jersey Meadows near Secaucus are still available (fig. 10).

Hunts Point

The city of New York is building a new fresh fruit and vegetable market at Hunts Point (fig. 10). The site is about 5¼ miles from the center of distribution. It is well located in relation to incoming rail and truck shipments, and is served by the New York, New Haven & Hartford Railroad, which accepts delivery of cars from other railroad lines for movement into New York and New England. Interchange with other lines is readily available. The Oak Point yard of the New Haven Railroad, with 5 float bridges and a 3,000-car capacity, is adjacent to this site.

The Hunts Point site is near the east side of the Bronx in an area devoted to small warehousing, junkyards, lumberyards, and similar uses. The 80 acres for the proposed butter, margarine, egg, and cheese merchants is bounded by Lafayette, Durant, Rayawa, and Coster Streets, and is adjacent to a proposed meat-and-poultry market area.

Excellent limited-access and through highways are available to handle both inbound and outbound truck shipments. The site is adjacent to Bruckner Boulevard, which directly connects with Long Island via Triborough, Whitestone, and Throgs Neck Bridges; is accessible to Manhattan and Bronx via the 149th Street Bridge; and to the west and south across the George Washington Bridge, reached by expressways from the market. Likewise, convenient routes are available to and from upstate New York and New England.

There would be little nonmarket traffic to interfere with vehicle movement within the market area, since Hunts Point is a peninsula and is not crossed by major traffic arteries. The land under consideration is level, filled land, necessitating substantial piling. The engineering firm that planned the wholesale fresh fruit and vegetable facilities indicated that wooden piles 40 to 60 feet long would be necessary. The firm then studied the feasibility of steel-cased concrete piling, which it expected to cost about the same as the wooden piling.

Enough land at a reasonable cost is available in this area to relocate the butter, margarine, egg, and cheese dealers, as well as the wholesale meat and poultry merchants. Thus there would tend to be developed, within this area, a complete wholesale and processing center for foods. Many of the service institutions of the market are capable of common usage. Facilities for truck servicing, restaurants, and banks are examples.

A possible arrangement of facilities for a wholesale butter, margarine, egg, and cheese market at the Hunts Point site is shown in figure 11. Locations for the fruit-and-vegetable and meat-and-poultry facilities are indicated, to show how these facilities could be fitted into the area. The cost of a site in this area, in condition to build, is estimated at $61,000 per acre.

Jersey Meadows

The State of New Jersey and Hudson County are planning a wholesale food distribution center in Jersey Meadows, near Secaucus. This site is in Hudson County, N.J., and is bounded by the Pennsylvania Railroad on the west, Secaucus Road on the north, New York, Susquehanna & Western Railroad on the east, and County Road on the south. It is about 7 miles from the center of distribution and is well located in relation to incoming rail and truck shipments. Yards of several important railroads are near the site. The major railroad in the area is the Pennsylvania, whose main line is one of the boundaries. Rail shipments from the south or west could also be received from any of several other railroads in the area, through interchange with the Pennsylvania. The location of the Jersey Meadows site is shown in figure 12.

Trucks could reach the site by the New Jersey Turnpike, U.S. Routes 1 and 9, or a number of State highways. These roads provide excellent access to the Lincoln and Holland Tunnels and the George Washington Bridge. There could be some delay in moving products through the tunnels, especially during rush hours. Service to Brooklyn and Queens would face a difficulty because delivery vehicles would have to cross Manhattan. However, deliveries within New Jersey, to the Bronx, and to Staten Island would be much easier than from a site in New York.

Substantial acreage is available in this area. In the earlier report on a wholesale fresh fruit and vegetable market, 631 acres were considered. Much of the area is tidal or has a refuse fill. Although the initial cost of land in this area would be low, the cost of filling the area and structural support would be high. Additional expense would be involved in relocating an existing high-voltage power line and the Penhorn Creek channel.

Figure 12 presents a possible arrangement of facilities for both the butter, margarine, egg, and cheese dealers and the meat and poultry dealers, to show how these facilities could be fitted into the area. The cost of the site in this area, in condition to build, is estimated at $61,000 per acre.

Enabling legislation has been enacted by the State of New Jersey creating the New Jersey Public Market Commission. Although financing was not yet definite at the time this was written, officials of this organization indicate that the market would be financed by municipal revenue bonds and that there would be limited payments in lieu of taxes.

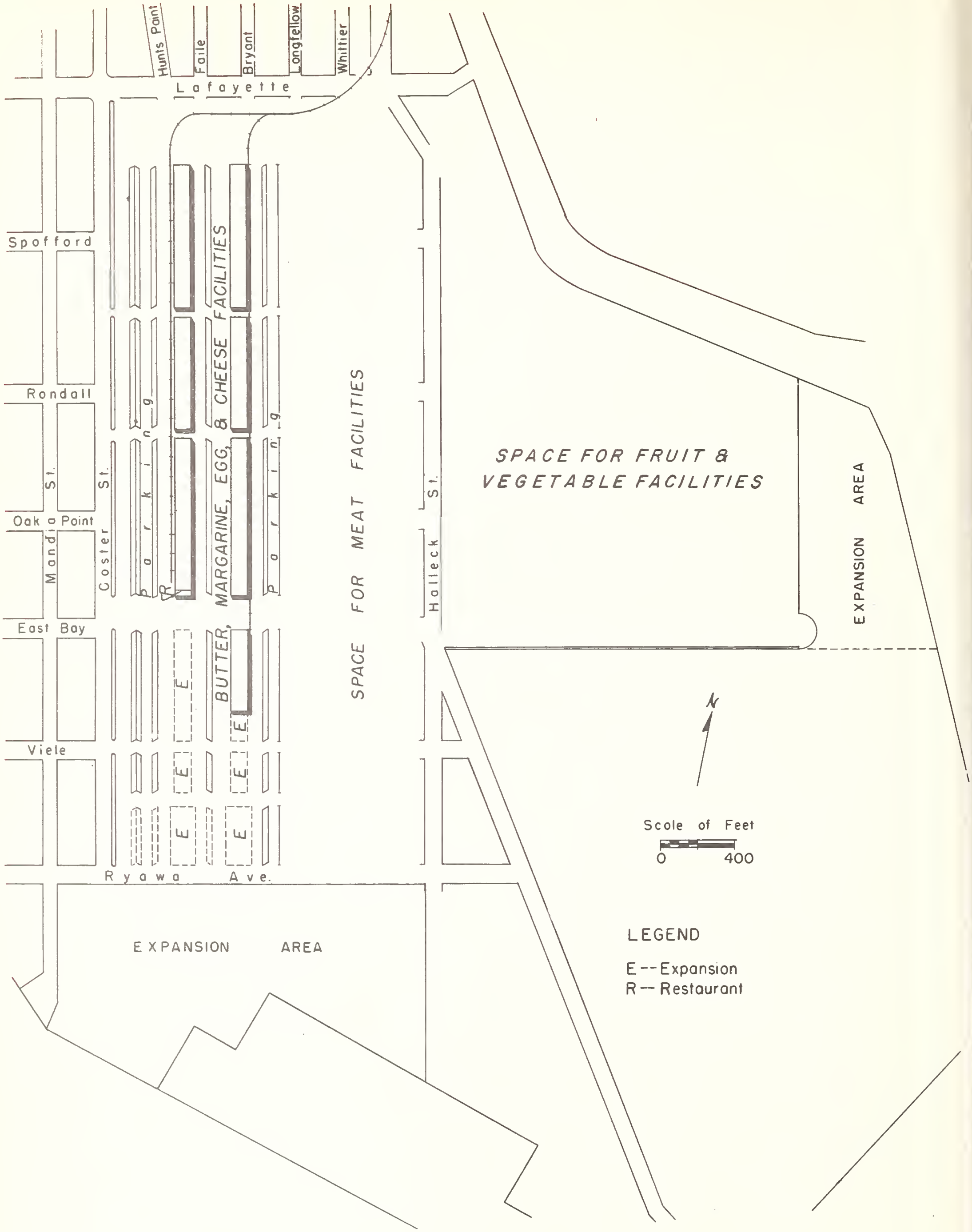


FIGURE 11.—Butter, margarine, egg, and cheese wholesale food center on the Hunts Point site.

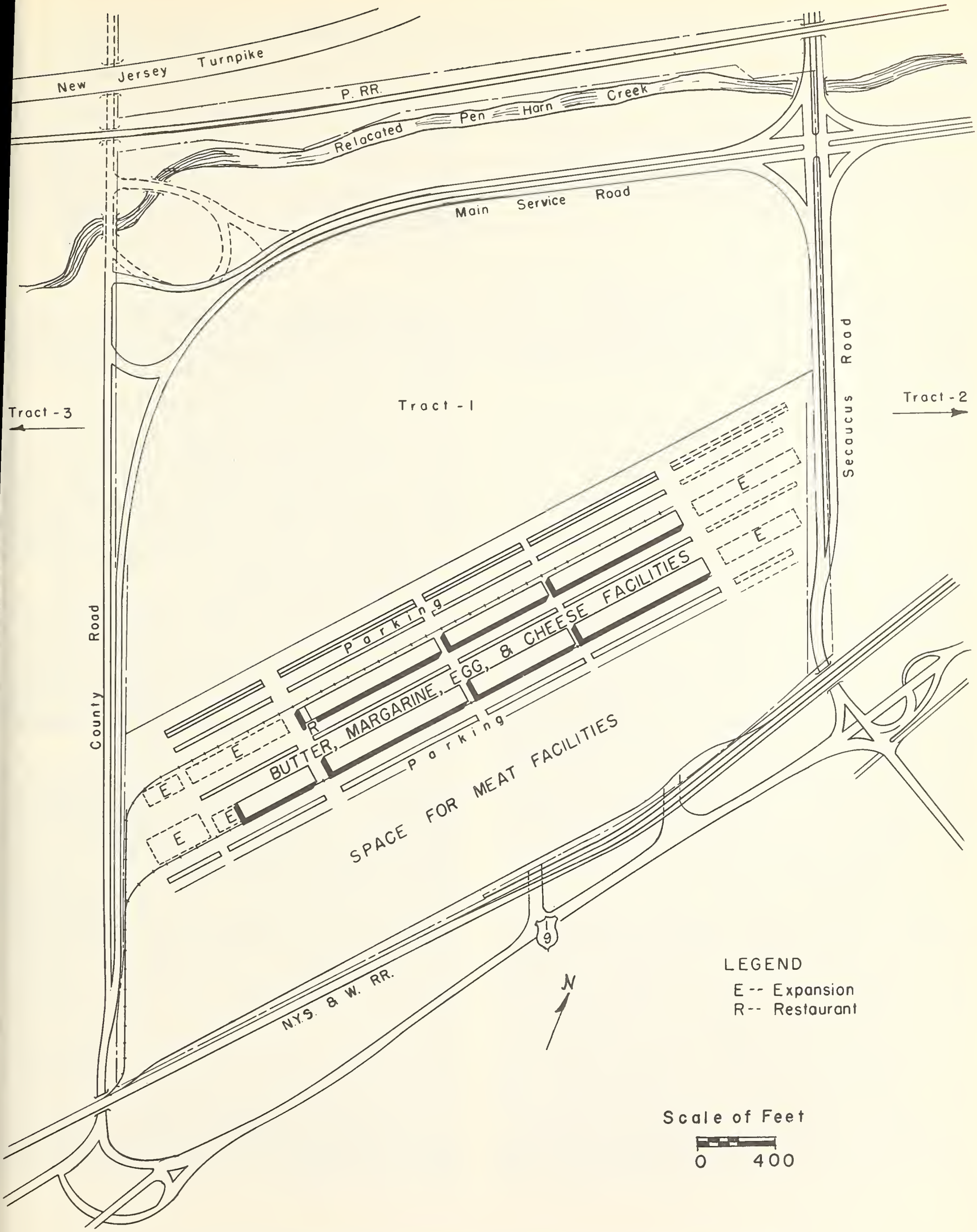


FIGURE 12.—Possible arrangement of facilities on the Jersey Meadows site.

Estimated Cost of Land and Facilities

The cost of providing butter, margarine, egg, and cheese facilities would involve two major components—land and facilities. Considerable variation is possible in either of these components.

If the facilities discussed in this report are not built as part of a wholesale food distribution center, some additional expenditures for related facilities would be required.

Land

Detailed studies were made in 1959 by the Department of Agriculture of the costs of acquiring land and placing it in condition to build at Hunts Point. In the report on the studies, land costs were estimated at $49,920 per acre for the Hunts Point site.

On March 21, 1961, a letter from the New York City Bureau of the Budget to the Board of Estimates indicated an estimated land cost for the fruit and vegetable market at Hunts Point at $49,393 per acre. Land costs in the area proposed for butter, margarine, eggs, and cheese are assumed to be the same, because, except for three blocks, the assessed value of the two areas is similar. Piling costs are estimated at $8,812 per acre, or a total estimated land cost of $58,205 per acre, piled and in condition to build.

While the assessed value of the entire 160 acres is slightly higher than the $10 million for the butter, margarine, egg, and cheese section and the meat and poultry section, a slight shifting of the site would eliminate three blocks having high assessed valuations, and could lower the total value of the site. Officials of the Housing and Redevelopment Board indicated that, if the entire site were used, and perhaps in any eventuality, the urban renewal process might be used to acquire the site. If urban renewal were used, the cost of the land could be lower than the costs used in this report.

Estimates by a private firm of consulting engineers for the Jersey Meadows project of the New Jersey Public Market Commission indicated a cost of $56,678 per acre in condition to build. The engineers propose to use piling at Hunts Point and surcharge at Jersey Meadows. The estimated time required to acquire and place in condition to build at Hunts Point is 1 year, and at Jersey Meadows, 1½ years. The cost of holding and owning the land, during this interim, at Hunts Point is estimated at $2,910 per acre. A total estimated land cost, piled and in condition to build, of $61,115 per acre would result. The cost of holding the land at Jersey Meadows is estimated at $4,251 per acre, or a total estimated land cost, in condition to build, of $60,929 per acre. Because of the lack of exactness in time period, lack of complete data, and similarity between the estimated costs of land at the two sites, costs of land in condition to build are rounded to $61,000 per acre at both sites in estimating costs of the proposed butter, margarine, egg, and cheese area.

Facilities

Costs of facilities are estimated on the basis of construction indexes for July 1961, costs of similar facilities in other areas, estimates made by local engineers, and estimated costs of constructing similar facilities in New York City.

Space provided in the initial construction depends on present and anticipated needs. Actual space used may differ from these estimates when final plans for construction are completed. *Estimated construction costs shown in this section should be used only as a guide in estimating the total costs of the market. They are not intended to replace firm estimates made by local architects and contractors at the time of construction.*

Cost estimates are for structures of the type previously described. The multiple-occupancy store units would not have finished offices, but each would include a mezzanine with a stairway and mezzanine railing, toilet facilities, sill cocks, fluorescent lighting fixtures, display lighting outlets, gas or electric space heaters, and platform lighting.

Detailed building cost estimates are for the shell only and do not include refrigeration rooms, refrigeration equipment, and various other features that individual dealers might wish to have included in the design. Cost estimates assume a "light mill" type of construction.

Estimates for paved surfaces include market streets and parking areas. Paving costs assume 7 inches of gravel foundation, 4 inches of macadam base, and 2 inches of asphaltic concrete surface. Utility connections for all buildings, including electricity, were assumed to be underground. Other costs, such as those for the architect's fee, the construction loan, and the contingency fund, are included in construction costs. The cost of the construction loan represents the total cost of the loan and is not an interest rate.

The following tabulation shows the estimated costs of facilities for the butter, margarine, egg, and cheese wholesalers, as of July 1961:

Cost of multiple-occupancy buildings: [1]	
A. 199 multiple-store units (in 7 buildings)—2,925 sq. ft. per unit (including mezzanines) @ $27,500 per unit or $9.40 per sq. ft	$5, 472, 500
B. 1 restaurant in a multiple-store unit, with public restrooms, @ $27,500 basic cost plus $4,500	32, 000
Cost of buildings	5, 504, 500
Other construction costs:	
A. Blacktop paving, 234,844 sq. yd. @ $4.40	1, 033, 314
B. Railroad tracks, 1,700 linear ft. lead-in track and 5,600 linear ft. behind buildings=7,300 linear ft. @ $14	102, 200
1 switch @ $3,600	3, 600
C. Storm sewer system, 6,950 linear ft. @ $15, 2,050 linear ft. @ $5	114, 500
D. Sanitary sewer system, 4,300 linear ft. @ $15, 2,000 linear ft. @ $5	74, 500
E. Utility connections: [2]	
1. Water distribution systems, cast-iron pipe, valves, fire hydrant assemblies, house service connections	91, 200
2. Gas distribution system, valves, house service accessories, metering pit	60, 675
3. Electric distribution system (underground installation) including all primary and secondary conduits, ducts, and cables; street lights and connections	200, 000
F. Chain link fence 8 feet high, 3,950 linear feet @ $3.50, 4 gates @ $300	15, 025
G. 18 floodlights @ $150	2, 700
Total of other construction costs	1, 697, 714
Cost of buildings and other construction	7, 202, 214
Architect's fee—6 percent of construction costs	432, 133
Cost of construction including architect's fee	7, 634, 347
Allowance for cost of borrowing construction funds, 5 percent of construction costs and architect's fee	381, 717
Cost of construction including architect's fee and cost of construction loan	8, 016, 064
Contingency allowance on all costs @ 10 percent of construction costs, architect's fee, and construction loan	801, 606
Total cost of buildings, other facilities, and associated costs	8, 817, 670
Cost of 80 acres of land @ $61,000	4, 880, 000
Total investment at either Hunts Point or Jersey Meadows	13, 697, 670

[1] These building costs are based on brick and concrete construction, as of July 1961.

[2] Based on computations for the New York City Terminal Market as estimated by private engineering firms.

Methods of Financing, Operating Costs, and Revenue Required

Regardless of how the market may be designed and built, its success depends upon its management. It should be operated not only efficiently but also in the public interest and without discrimination against any buyer or seller, against any form of transportation or against any producing area.

The type of ownership selected for the proposed market could materially affect the methods of financing and the rents necessary to make it self-sustaining. The market could be built by (1) a private corporation, (2) a New York State Regional Market Authority, (3) a City of New York Authority, or (4) the New Jersey Public Market Commission. Some of these possibilities are clearly applicable to specific sites, and therefore will be discussed only in relation to those particular sites. For instance, officials have indicated that neither the city nor State of New York should be expected to assist in financing a food distribution center in New Jersey, nor could the New Jersey Public Market Commission be expected to assist in financing a food distribution center in New York. Details of financing and operating methods may be seen in other publications of the U.S. Department of Agriculture.[9]

Financing by a Private Corporation

A private corporation might finance, construct, or operate new facilities on any site considered. The operating costs and revenue requirements for the proposed facilities under a private corporation will be considered under four categories: (1) Cost of management; (2) insurance, maintenance, and repairs; (3) taxes on real estate; and (4) debt service. These requirements will be considered for both Hunts Point and Jersey Meadows.

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[9] Clowes, H. G., Elliott, W. H., Crow, W. C. Wholesale Food Market Facilities—Types of Ownership and Methods of Financing. Mkt. Res. Rpt. 160, U.S. Dept. Agr. April 1957. See also footnote 1, p. 3.

The annual operating and sanitation expenses, including a 10-percent reserve or contingency, for the proposed wholesale butter, margarine, egg, and cheese facilities in a food distribution center are estimated as follows:

Section manager or assistant food center manager	$12,000
Assistant to the section manager	8,000
Proportionate share of food center management	3,000
Watchmen, 2 @ $6,000	12,000
Secretary-clerk	6,000
Legal, auditing and other special services	5,000
Office rental	3,000
Travel	1,200
Advertising and promotion	2,000
Office supplies and equipment	2,000
Communications, telephone and telegraph	1,500
Utilities for office	2,000
General market sanitation [1]	12,000
Snow removal	3,000
Contingency	7,300
Total	80,000

[1] Does not include cost of garbage and trash removal, because in the markets now being operated by the city of New York, each tenant must arrange for removal of these products and the charges are assessed on the amount to be collected.

Insurance, Maintenance, and Repairs

A private corporation would insure the buildings for fire and extended coverage, and would need liability insurance. Rates supplied for the type of construction proposed by the Insurance Rating Organization of New York and the Insurance Rating Organization of New Jersey indicate that the applicable rates for both areas could be $1.15 per $1,000 of insurance. It was assumed that the structures would be insured for 80 percent of their value. The cost of public liability insurance in New York or New Jersey for a maximum $500,000 liability for any one occurrence would be $875 per year. These rates do not include insurance for the property of the tenants.

Maintenance and repair costs were assumed to be one-half of 1 percent of the facility costs. This rate was applied to all buildings and facilities except land. To provide for increases in these costs, a 10-percent reserve or contingency fund has been computed for all costs. These computations appear in table 15.

Real Estate Taxes

The third major expense that would be involved in operation of the proposed market through private financing would be taxes on real property and improvements. The tax rate for 1960 was $42.40 per $1,000 in New York City, and $86.68 per $1,000 in New Jersey, on the basis of the assessed valuation. The assessed valuation in both cases was assumed to be 100 percent of the "fair market value." In both cases, the "fair market value" is assumed to be the total investment costs in land and improvements. The estimated amount of taxes to be paid by a privately financed company at each of the sites is shown in table 16.

TABLE 15.—*Estimated cost of insurance, maintenance, and repairs for butter, margarine, egg, and cheese facilities, New York City, 1961*

Item	Value of facilities upon which item is based	Cost
	Dollars	*Dollars*
Fire and extended coverage insurance [1]	7,054,136	8,112
Liability insurance [2]	500,000	875
Maintenance and repairs [3]	8,817,670	44,088
Reserve or contingency [4]		5,308
Total		58,383

[1] Insurance based on 80 percent of the cost of buildings and other facilities at $1.15 per $1,000.
[2] Flat rate of $875 per year for $500,000 limit.
[3] Assuming ½ percent of improvements, except land.
[4] 10 percent of preceding items.

TABLE 16.—*Estimated real estate taxes which would be paid on butter, margarine, egg, and cheese facilities, New York City, 1961*

Items	Location	
	Hunts Point	Jersey Meadows
	Dollars	*Dollars*
Assessed value [1]	13,697,670	13,697,670
Tax rate	[2] 42.40	[3] 86.68
Taxes to be paid	580,781	1,187,314
Contingency [4]	58,078	118,731
Total tax reserve	638,859	1,306,045

[1] Assumed to be the total investment cost.
[2] 1960 tax rate on $1,000 of valuations Borough of the Bronx, New York, N.Y.
[3] 1960 tax rate per $1,000 of valuation for Hudson County, N.J.
[4] Computed at 10 percent.

Income Required for Debt Service

The fourth major segment of costs that must be paid is debt service. If the market is to be self-liquidating, the investment must be repaid from market revenue. Facilities of the type proposed should not become obsolete in less than 25 years and could be useful for a much longer period. The facilities proposed are of durable construction and, with only minor alterations, could be expanded or converted to use by several types of occupants.

A private corporation financing, constructing, and operating the market would probably obtain its capital from three sources: (1) First mortgage, (2) second mortgage, and (3) equity capital.

Depending upon the money market at the time the money is borrowed, various amounts could be obtained from each of these sources. In general, about 65 percent might be obtained on a first mortgage and 20 to 25 percent on a second mortgage or by issuance of preferred stock. The remaining 10 to 15 percent would be equity capital.

If the first mortgage were obtained for 5½ percent, the second mortgage for 6½ percent, the equity capital having a value of 7 percent, then the average interest rate would be about 6 percent. If the equity capital were supplied by tenants in proportion to relative cost of the facilities used by each, it is probable, because of the tax situation, that there would be no payment of dividends to stockholders. Under this assumption, of course, the 6-percent interest rate might be somewhat higher than the actual cost of borrowing the money.

For purposes of this report, a rate of 6 percent amortized over 25 years was assumed. This rate would be a composite of the varying rates charged for capital from each of the sources.

If bonds were issued, financiers and others purchasing the bonds would probably demand that current income exceed current expenses by some stipulated amount and that this amount remain as a reserve fund.

Amounts required would vary according to the "tightness" of the money market, the financial rating of the bond issuer, and the nature of the collateral offered. Such a reserve fund should usually amount to about 20 percent of the annual costs. The fund might not be required to accumulate more than a full year's amortization payment; after that accumulation, the allowance might be discontinued. In these computations, a 20-percent reserve or contingency allowance was included.

Until a financial plan is worked out, the terms of the loan could not be known. However, to estimate the amount of rental required on the various facilities, an average rate of 6 percent for 25 years, as mentioned, is used. Table 17 shows the estimated annual income required for debt service.

Total Annual Revenue Required

Estimates of the amount of revenue needed by a private company to operate the butter, margarine, egg, and cheese section, including management, insurance, maintenance, repairs, real estate taxes, and debt services, are shown in table 18. The total amount required at Hunts Point would be $2.1 million, or $3.58 per square foot rented. The amount required at the Jersey Meadows site would be $2.7 million, or $4.67 per square foot rented.

Financing by a New York State Regional Market Authority

If market facilities were financed under the State of New York Regional Market Authority Act,[10] the cost of management, insurance, maintenance, and repairs would be the same as those estimated for a private corporation. Market facilities constructed under this plan would be exempt from real estate taxes, but a payment would probably be made to the local government in lieu of these taxes. In estimating this payment in lieu of taxes, it is assumed that it would be the same as taxes paid by a private corporation.

Debt service payments might be less under a New York State Regional Market Authority than with private financing. Under the laws of the State of New York, the State legislature, on the recommendation of the State commissioner of agriculture and marketing, can appropriate and lend to a regional market authority up to 50 percent of the cost of constructing approved new market facilities. The remaining 50 percent may be financed by the issue of 3 percent State 30-year revenue bonds. The State loan is without interest and due in 30 annual installments. To sell the remaining bonds on the open market, it

TABLE 17.—*Estimated annual income required for debt service and reserve for the butter, margarine, egg, and cheese market facilities, New York City, 1961*

Item	Income required
	Dollars
Investment	13, 697, 670
Annual payments, including principal and interest [1]	1, 071, 569
Reserve or contingency fund [2]	214, 314
Total amount needed	1, 285, 883

[1] Assuming 6 percent annual interest rate amortized over 25 years.

[2] Computed at 20 percent of annual amortization charge.

TABLE 18.—*Total annual revenue required for the butter, margarine, egg, and cheese area of a food distribution center, if financed by a private corporation, New York City, 1961*

Cost item	Location of site	
	Hunts Point	Jersey Meadows
	Dollars	*Dollars*
Market management	80, 000	80, 000
Insurance, maintenance, and repairs	58, 383	58, 383
Real estate taxes	638, 859	1, 306, 045
Debt service	1, 285, 883	1, 285, 883
Total	2, 063, 125	2, 730, 311

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[10] New York Acts, 1950, L2,613 book 42, pp. 257–286, art. 4, title 1.

TABLE 19.—*Annual payments, debt service, and reserve required for the butter, margarine, egg, and cheese section of a wholesale food distribution center if financed by a New York State Regional Market Authority, 1961*

Item	Amount needed at Hunts Point
Source of funds:	*Dollars*
Interest-free State loan	6, 848, 835
Revenue bonds	6, 848, 835
Annual repayment to the State [1]	273, 954
Annual debt service for revenue bonds [2]	393, 329
Debt reserve [3]	78, 666
Grand total	745, 949

[1] Because of the comparison between various methods of financing, repayment is computed over 25 years instead of 30 years.

[2] 3 percent interest for 25 years.

[3] Assumed to be 20 percent of annual debt service for bonds.

is assumed that it would be necessary for the market authority to set aside a reserve over and above the required debt service payment. The reserve might not be required if the bonds were sold to a public agency using its own funds for investments. However, for this study, a debt reserve of 20 percent is included. After a full year's reserve is obtained, as for a private corporation, additions to the fund might be discontinued. Table 19 shows the amounts necessary and method of computing the probable revenue required for debt service under a regional market authority. A New York State Regional Market Authority could not finance the proposed market at the Jersey Meadows site without basic changes in the present law. The total revenue required is shown in table 20.

TABLE 20.—*Total annual revenue required for the butter, margarine, egg, and cheese area of a food distribution center at Hunts Point if financed by a New York Regional Market Authority, 1961*

Cost item	Amount
	Dollars
Market management	80, 000
Insurance, maintenance, and repairs	58, 383
Real estate taxes	638, 859
Debt service	745, 949
Total	1, 523, 191

Financing by New York City

The New York City Commissioner of Markets is authorized to construct and operate food markets, both wholesale and retail. If the city should build and operate the proposed facilities, it is assumed that the policy of basing annual rentals on a formula approximating 11 percent of the investment cost of land and facilities will continue.[11] This formula includes all debt service charges, a charge in lieu of real estate taxes, maintenance and repair costs, operating expenses, administrative charges to defray costs of supervising the market property, and a charge to offset losses from vacancies. Management, office expenses, and travel allowances for the supervising staff are included in the administrative expense. The operating expense items include personnel, operation of the market, and general maintenance. Police protection and general street cleaning are provided by the city.

In addition to the 11-percent rental charge, the tenant is responsible for costs of refuse collection, insurance for personal property, repairs except structural repairs, his own liability and property damage insurance, and all charges for water, gas, and electricity consumed on the premises. The contingency fund is included in the 11 percent. This type of financing obviously would not be available for a new market built at Jersey Meadows.

The estimated annual revenue necessary to finance and operate the proposed facilities, based on 11 percent of the estimated total investment cost at Hunts Point of $13,697,670, would be $1,506,744.

Although the city's formula calls for 11 percent, the Board of Estimates has authority to reduce the payment in lieu of taxes. In fact, the normal payment, based upon recent experience, is usually about half of this rate. The estimated annual revenue needed, assuming a 50-percent payment in lieu of taxes, would be $1,187,315.

Financing by the New Jersey Public Market Commission

Financing and operation of the proposed wholesale facilities at Jersey Meadows by the State of New Jersey would be similar to financing and operation by the State of New York for Hunts Point, as previously discussed. Management, insurance, maintenance, and repairs are assumed to be identical to other methods of financing and operations, except for a change in the tax costs and absence of an interest-free State loan.

There has been granted to political subdivisions the power to appropriate and contribute funds in support of the market project. The New Jersey Public Market Commission is further given the power to enter into agreements with any municipality in which its property is located, whereby annual sums of money may be paid by the commission to the municipality in lieu of taxes on such property, in an amount not greater than the taxes previously paid or due on the property prior to development of a public market by the commission.[12] To compute the payments in lieu of taxes, it has been assumed that the full tax rate has been applied to the present value of the land. The payments in lieu of taxes on real estate valued at $1,508,970, at the rate of $86.68 per $1,000 valuation, would be $130,798 annually. No contingency fund or reserve for taxes would be necessary, because of the tax base and the laws pertaining to such matters.

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[11] Based on a formula for computing rentals in new municipal property, as furnished by the New York City Department of Markets.

In estimating the costs of financing the proposed facilities, it was assumed that financing would be based on tax-exempt 25-year bonds at 3.5 percent interest annually. A reserve or contingency fund of 20 percent of the annual debt service costs was assumed, but that might be discontinued after 1 full year's payments were accumulated. Table 21 shows the amount needed.

TABLE 21.—*Annual amortization payments required for the butter, margarine, egg, and cheese section of a wholesale food distribution center at Jersey Meadows if financed and operated by the New Jersey Public Market Commission*

Item	Amount
	Dollars
Investment	13, 697, 670
Annual payments, including principal and interest [1]	831, 038
Reserve or contingency fund [2]	166, 208
Total amount needed	997, 246

[1] Assuming 3½ percent for 25 years.
[2] Assuming 20 percent of the debt service.

The estimated total revenue required for management, insurance, maintenance, repairs, taxes, and debt service for the proposed wholesale butter, margarine, egg, and cheese facilities, if financed and operated by the New Jersey Public Market Commission, would be $1,266,427 annually. Table 22 shows these costs by items.

Comparison of Revenue Requirements for Different Means of Financing

A comparison of the revenues required by the differing methods of financing considered in this report indicates a substantial range of costs. The cost would be highest if the market were operated and financed by a private concern. If either New York City or the New Jersey Public Market Commission constructed and operated the market, costs would be about the same for those two methods. The revenue required for each of the methods is shown in table 23.

TABLE 22.—*Total annual revenue (including reserve or contingency fund) required foı the butter, margarine, egg, and cheese facilities at Jersey Meadows site if financed and operated by the New Jersey Public Market Commission*

Cost item	Amount
	Dollars
Market management	80, 000
Insurance, maintenance, and repairs	58, 383
Real estate taxes [1]	130, 798
Debt service	997, 246
Total	1, 266, 427

[1] Assuming a tax rate of $86.68 per $1,000 of valuation for the unimproved land, valued at $1,508,970.

Rental Charges

The revenue required, regardless of type of financing, will be derived primarily from rent or leases of facilities to individual tenants. For purposes of this study, it is assumed that all revenue requirements will be covered by this source. Under this assumption, the "break-even" rentals charged for the multiple-occupancy units would be total revenue required minus the restaurant rental. The restaurant rental was computed as a percent of the total revenue, carrying its full share of the development costs. The total revenue required, minus the restaurant rent, divided by the total number of square feet would equal the rent per square foot for wholesalers. As may be seen in table 24, the rents per square foot would vary from $4.66 for private financing at Jersey Meadows to $2.16 at Jersey Meadows with Public Market Commission financing; and at Hunts Point, from $3.52 with private financing to $2.03 with New York City financing with a 50-percent payment in lieu of taxes.

Cost Reductions Possible

Improved facilities could affect many of the costs. Such items as the costs of management salaries, light, and telephone would not be affected. The same measurable costs computed for the 108 dealers in Lower Manhattan also were estimated for these dealers in the proposed facilities. Although such projections involve elements of probability, the estimates were based upon research by the Department on operating costs within modern terminal facilities throughout the country. A comparison of costs of moving products into, within, and out of a central market at Hunts Point and at Jersey Meadows is shown later in table 26.

Cartage Costs From Points of Arrival

Cartage costs are incurred in loading and delivery of merchandise from either team tracks,

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[12] Summarized from: Proposed Food Distribution Center, New Jersey Public Market Commission, December 1960.

TABLE 23.—*Total annual revenue required for different means of financing a butter, margarine, egg, and cheese wholesaling section of a food distribution center at different sites*

Cost item	Location and type of financing				
	Hunts Point			Jersey Meadows	
	Private financing	Regional authority	New York City	Private financing	New Jersey Public Market Commission
	Dollars	*Dollars*	*Dollars*	*Dollars*	*Dollars*
Market management	80,000	80,000	(1)	80,000	80,000
Insurance, maintenance, and repairs	58,383	58,383	(1)	58,383	58,383
Real estate taxes	638,859	638,859	(1)	1,306,045	130,798
Debt service	1,285,883	745,949	(1)	1,285,883	997,246
Total	2,063,125	1,523,191	[2] 1,506,744 [3] 1,187,315	2,730,311	1,266,427

[1] Included in formula, but not computed separately.

[2] Based on 11 percent of total investment cost of $13,697,670, and full payment in lieu of taxes.

[3] Assuming 50 percent payment in lieu of taxes.

TABLE 24.—*"Break-even" rentals necessary to supply revenue required for butter, margarine, egg, and cheese facilities in a wholesale food distribution center, New York City, 1961*

Type of financing	Annual revenue required	Annual rental for restaurant [1]	Revenue required from multiple units	Annual rental per square foot for multiple-occupancy units [2]
	Dollars	*Dollars*	*Dollars*	*Dollars*
Hunts Point:				
Private	2,063,125	11,966	2,051,159	3.52
New York Regional Authority	1,523,191	8,835	1,514,356	2.60
New York City:				
Full payment in lieu of taxes	1,506,744	8,739	1,498,005	2.57
50 percent payment in lieu of taxes	1,187,315	6,886	1,180,429	2.03
Jersey Meadows:				
Private	2,730,311	15,836	2,714,475	4.66
New Jersey Public Market Commission	1,266,427	7,345	1,259,082	2.16

[1] Restaurant rental computed as 0.58 percent of revenue required, which is the ratio of restaurant construction cost to project construction cost.

[2] Assuming 582,075 square feet constructed.

piers, West Street, or other points of initial receipt. The recommended facilities for the butter, margarine, egg, and cheese firms would provide direct rail car and truck access to the stores and platforms. This would eliminate much double handling and cartage occurring in present facilities. Wide streets would encourage low cartage rates for the amount still carted, by maintaining traffic flow and eliminating congestion.

In the new facilities, cartage costs would not be eliminated, but could be substantially reduced. Since the ship and air receipts, 7,316 tons, would continue to arrive at various piers and airports, volume or cost reductions would be difficult to estimate accurately and are therefore assumed constant. Amounts purchased from dealers outside Lower Manhattan, 58,158 tons, would probably still be purchased from the same dealers, and cost reductions of transporting from one location would be about offset by cost increases from other locations. Therefore, the entire volume would cost about as much as at present.

With direct rail access to the rear platforms, most rail receipts would no longer need to be carted. In instances where a dealer wished to use the rail car for temporary storage, it would probably be to his advantage to have the car "spotted" at a team track and cart the merchandise, rather than tie up his rear loading docks or respot the car. This volume, expected to remain the same in the new facilities, is about 1,000 tons per year. Also, it would probably be in a dealer's best interest to use cartage if a car were "pooled" or shared with several dealers in different market buildings or shared with dealers outside the market. About 17 percent of the rail receipts, or 3,393 tons, are "pooled" and would probably continue to be carted. All truck receipts could be unloaded at the platforms. In instances where a truck contained orders for more than one dealer, each order could be unloaded at each dealer's store. A total of 69,867 tons per year would remain subject to cartage costs at either of the new locations.

The ship and air receipts and the amounts purchased from other dealers would continue to cost $9.98 per ton for 65,474 tons, or $653,431. Cartage companies indicated that the cost of within-market cartage for the volumes in the pool cars and the storage cars, 4,393 tons, would be about half of the present rates, or about $5.20 per ton, because of the improved loading and unloading conditions and reduced traffic congestion. The 4,393 tons at $5.20 per ton would cost about $22,844. The total expected cost of cartage in the new facilities would be about $676,275, or $9.67 per ton, about $1 million less than previously paid.

Costs Within the Market Area

Handling Costs

The greatest savings realized would be from increased efficiency in the improved facilities. The one-story, multiple-occupancy buildings recommended would provide a rear and a front platform at truckbed level. Use of the unit-load principle, with the aid of modern materials-handling equipment and a fully palletized operation, should make possible substantial reductions in handling costs. Bulk products could be loaded on efficient handling equipment and transported to work areas for further processing, to the coolers for storage, or to display areas, or they could be immediately reloaded on outbound trucks. Even without such equipment, savings would accrue to dealers handling smaller volumes, because of improved handling operations. It is assumed that most merchandise in the proposed facilities would be handled through the dealers' stores. Some merchandise would still be bought from other dealers.

To estimate the cost in new facilities in the New York area, modern butter, margarine, egg, and cheese operations were examined in various eastern cities. Extensive cheese-handling operations were examined in upstate New York. Although none of the operations studied had all the problems of New York dealers, it was possible to estimate optimum labor requirements for parts of operations. From such synthesis, and from observing good procedures employed by New York dealers, it was determined that, at 1961 labor and equipment costs, it would cost the dealers studied about $10.35 per ton to handle their merchandise.

In the new facilities, it was assumed that 387,196 tons would be handled. At $10.35 per ton, the total handling cost would be about $4 million, or $2.6 million less than at present.

Interdealer Movement

Some reduction in interdealer transfer costs would be possible in the recommended facilities, although most of this movement would continue. For example, a dealer may specialize in one commodity, but may handle another in small quantities as a service item. This secondary item would be acquired from another primary receiver in the market at an advantage to both. Reductions in costs would be possible in the proposed facilities because such movement could be effected more simply.

Discussions with dealers buying within the market indicated that they would not materially change their purchasing habits in new facilities. Therefore, it is assumed that the interdealer tonnage would remain the same. However, because of the improved transfer conditions at the new facilities, a substantial cost reduction would be expected. Cartage company officials indicated that short-haul rates in the new market would be about $5.20 per ton, or about 65 percent of the present cost, for interdealer transfers. At present, some of the interdealer movement is by handtruck. In the new market, much more would move by handtruck or by forklift truck. The actual cost reduction cannot be calculated until it is known where specific dealers will be located in relation to their sources of supplies. In the proposed facilities, it appears that the present volume of interdealer transfers could be moved for about $59,138, with an annual saving of $50,862.

Spoilage, Deterioration, and Pilferage

The present cost of spoilage, deterioration, and pilferage is low, and therefore cost reductions would be low. Losses due to spoilage and deterioration might be slightly reduced. Such losses are already at a minimum because of readily available alternative outlets for distress merchandise within the city. In the present facilities, pilferage is the main problem. It is in this cost item that most savings should accrue to relocated firms, by enabling them to have better control of merchandise.

The dealers who estimated the costs of spoilage, deterioration, and pilferage indicated that they could probably reduce their present pilferage rates one-half, or reduce their entire costs from these three causes by about 25 percent. In the new facilities, on this basis, annual savings of about $350,000 could be expected.

Rents

Rental charges in the new facilities must produce the total annual revenue required for the market. From the calculations presented earlier in table 24, the revenue required from multiple units could vary from $1.2 million to $2.7 million, depending upon the market location and the method of financing.

A comparison of the rents now charged with those in the proposed facilities indicates that rent increases would occur with all types of financing in both areas. Rents could increase as much as $2,205,000 or as little as $672,000.

Cost of Distribution From the Central Market

The location of the new facilities may either increase or reduce the total cost of moving products from the market to retail outlets. If the market were located some distance from the center of distribution, cartage and other handling charges between it and the retail outlets would increase. If it were necessary for trucks to travel through highly congested areas or to make constant use of toll facilities, the costs for distribution would tend to be higher.

The total cost of distribution would differ at Hunts Point from the cost at Jersey Meadows. At Hunts Point, because of the connecting expressway systems, access to all metropolitan areas would be more convenient than from the present area. Jersey Meadows also would be more convenient, but since about 85 percent of the tonnage would have to move across the Hudson River, the tolls would more than offset other savings that might be made in the cost of moving products from the market to retail outlets.

Calculation of the present distribution costs indicated that they depended upon the elasped time of the trip and upon the tolls. Although the distance also was important in New York, it was a negligible part of the total cost. It is assumed that from either of the two locations, the same volume would be sold within each distribution area as at present. The time-toll factor was computed from both market sites to the various locations of the retailers and return.

To compute the time required to make deliveries from Hunts Point and Jersey Meadows, a comparison was made with time required for delivery from Lower Manhattan. The records of the few dealers who kept trip records were analyzed, and total elapsed time along normal delivery routes was determined. To estimate the time required to serve the various delivery areas from the proposed sites, the authors consulted shipping agents, cartage companies, and truckdrivers. In addition, during November 1961, trucks were timed from the general areas of the proposed market sites to central points in the distribution areas, and these times were doubled and averaged to estimate elapsed time required for a single round trip.

Discussions with cartage company officials and dealers who leased trucks indicated that a standard insulated truck with two axles would cost $205 per week, including mileage, on an annual lease basis. Because of the general industry policy of a 40-hour week and the probability that cartage companies would continue to deliver most of the tonnage, it was estimated that a truck would cost $5.12 per hour. The truckdriver would cost about $115 per week, or $2.88 per hour, including fringe benefits. Therefore, the cost of the truck and driver was estimated at $8 per hour.

TABLE 25.—*Estimated costs for distributing butter, margarine, eggs, and cheese from Hunts Point and Jersey Meadows, 1961*

Destination	Average elapsed time per trip [1]	Average cost per load [2]	Average volume per load	Cost per ton [3]
	Hours	*Dollars*	*Tons*	*Dollars*
From Hunts Point to—				
Manhattan	3.1	24.80	2.4	10.30
Bronx and Westchester	2.1	16.80	2.7	6.20
Brooklyn, Queens, and Long Island	2.5	21.20	2.7	7.85
New Jersey, Richmond, and other metropolitan areas	3.3	28.90	2.9	9.95
New York, upstate New York, and New England [4]	.9	9.20	3.0	3.05
South and West [4]	2.0	19.50	3.0	6.50
From New Jersey to—				
Manhattan	2.3	19.65	2.4	8.20
Bronx and Westchester	3.0	26.50	2.7	9.80
Brooklyn, Queens, and Long Island	3.4	29.60	2.7	10.95
New Jersey, Richmond, and other metropolitan areas	2.0	16.00	2.9	5.50
New York, upstate New York, and New England [4]	2.0	20.50	3.0	6.85
South and West [4]	.9	8.50	3.0	2.85

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[1] Includes elapsed time to central point in the distribution area, time required for delivery in the area, and time required to return to the market site.

[2] Costs of truck, driver, and tolls included in delivery operation. Computed at $8 per hour, $5.12 for truck rental and $2.88 for the driver. Tolls included are those incurred by using most convenient routes, which include George Washington, Bayonne, and Goethals Bridges, Holland and Lincoln Tunnels, and Brooklyn Battery Tunnel at $0.75 each way; the Triborough, Bronx-Whitestone, and Throgs Neck Bridges and Queens-Midtown Tunnel at $0.50 each way. Turnpike tolls at an average $0.50 each way are included on shipments that might use this route.

[3] Rounded.

[4] These times are those required for a round trip to the edge of the New York metropolitan area.

Table 26.—*Summary of selected savings available through relocation of the Lower Manhattan butter, margarine, egg, and cheese dealers, by type of financing, 1961*

Item	Volume	Hunts Point									Jersey Meadows					
		Private financing			State financing			City financing			Private financing			New Jersey Public Market Commission		
		Average cost/ton	Total cost	Savings[1]	Average cost/ton	Total cost	Savings	Average cost/ton	Total cost	Savings	Average cost/ton	Total cost	Savings	Average cost/ton	Total cost	Savings
	Tons	*Dollars*	*1,000 Dollars*	*1,000 Dollars*	*Dollars*	*1,000 Dollars*	*1,000 Dollars*	*Dollars*	*1,000 Dollars*	*1,000 Dollars*	*Dollars*	*1,000 Dollars*	*1,000 Dollars*	*Dollars*	*1,000 Dollars*	*1,000 Dollars*
Cartage costs from point of arrival	69, 867	9. 67	676	1, 003	9. 67	676	1, 003	9. 67	676	1, 003	9. 67	676	1, 003	9. 67	676	1, 003
Costs within the market area:																
Handling [2]	387, 196	10. 35	4, 007	2, 684	10. 35	4, 007	2, 684	10. 35	4, 007	2, 684	10. 35	4, 007	2, 684	10. 35	4, 007	2, 684
Interdealer movement	13, 595	4. 35	59	51	4. 35	59	51	4. 35	59	51	4. 35	59	51	4. 35	59	51
Spoilage, deterioration, and pilferage		(4)	970	350	(4)	970	350	(4)	970	350	(4)	970	350	(4)	970	350
Rents	375, 696	5. 46	2, 051	−1, 543	4. 03	1, 514	−1, 006	[5] 3. 99 [6] 3. 14	[5] 1, 499 [6] 1, 180	[5] −991 [6] −672	7. 22	2, 715	−2, 207	3. 35	1, 259	−751
Subtotal			7, 087	1, 542		6, 550	2, 079		[5] 6, 535 [6] 6, 216	[5] 2, 094 [6] 2, 413		7, 751	882		6, 295	2, 334
Cost of distribution from the central market metropolitan area:																
Manhattan	110, 808	10. 30	1, 141	−364	10. 30	1, 141	−364	10. 30	1, 141	−364	8. 20	909	−132	8. 20	909	−132
Bronx and Westchester	64, 845	6. 20	402	259	6. 20	402	259	6. 20	402	259	9. 80	635	26	9. 80	635	26
Brooklyn, Queens, and Long Island	137, 127	7. 85	1, 076	323	7. 85	1, 076	323	7. 85	1, 076	323	10. 95	1, 502	−103	10. 95	1, 502	−103
New Jersey, Richmond, and other metropolitan areas	30, 178	9. 95	300	−44	9. 95	300	−44	9. 95	300	−44	5. 50	166	90	5. 50	166	90
Other outlets: [3]																
Upstate New York and New England	18, 758	3. 05	57	30	3. 05	57	30	3. 05	57	30	6. 85	128	−41	6. 85	128	−41
South and West	13, 980	6. 50	91	−27	6. 50	91	−27	6. 50	91	−27	2. 85	40	24	2. 85	40	24
Subtotal			3, 067	177		3, 067	177		3, 067	177		3, 380	−136		3, 380	−136
Grand total			10, 830	2, 722		10, 293	3, 259	9, 959		[5] 3, 274 [6] 3, 593		11, 807	1, 749		10, 351	3, 201

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[1] Savings were computed by multiplying the volume (col. 1) times the average cost per ton (col. 2), equaling total cost (col. 3), and subtracting from the respective items in tables 11, 12, and 23.

[2] Volume handled is the sum of present volume and interdealer transfers.

[3] Computed as if the volume were delivered to a destination at the edge of the metropolitan area.

[4] Data not computed on cost per ton.

[5] 11 percent of total investment with full payment in lieu of taxes.

[6] 50 percent payment in lieu of taxes.

Within the metropolitan area, there are many toll facilities. The tolls required were added when the toll facilities were located on the most commonly used routes. A calculation of the the distribution costs appears in table 25.

If the distribution costs are as estimated, a comparison with table 12 indicates that annual distribution costs from Hunts Point would be $177,000 less than from the present market. From Jersey Meadows, distribution costs would increase by $136,000. A summary of selected savings available from relocation of these dealers may be seen in table 26.

Nonmeasurable Savings

Many of the possible savings of a modern wholesale market cannot be measured objectively. Such savings would be shared by market operators, buyers, market employees, transportation agencies, consumers, and the municipality involved. Wholesalers would benefit from improved working conditions and better competitive environment.

Because of the more efficient operating methods possible in the proposed facilities, the competitive position might be improved and the relative percentage of the total business maintained or increased. In the Lower Manhattan market, some of the major firms are operating in two or more facilities. It would be possible for these firms to consolidate operations and reduce costs.

Market Employees

Market employees' working conditions would be improved in the proposed facilities, providing higher employee morale and creating greater work efficiency. The buildings were designed so that, with proper handling equipment, the worker's job would be less strenuous. Over a period of time, this could possibly justify an increase in hourly earnings. Improved parking facilities, with conveniences readily available, would also better serve the worker in the market.

Buyers

The multiple-occupancy units recommended would enable the buyer to shop the market with greater ease and in less time. Platforms would facilitate order assembly and loading-out operations. The parking areas and wide streets would eliminate congestion and provide adequate parking for buyers' trucks. This would reduce the time necessary for this phase of marketing, and reduce purchasing costs. Because of the improved facilities, buyers who now shun the market might make increased use of it, thereby benefiting themselves and the dealers.

Transport Agencies

Transportation agencies would be in a better position to serve the market in the proposed facilities. The lack of direct rail facilities to serve the present area has placed the railroads at a disadvantage. The proposed facilities would provide rail service directly to the rear platforms of the store units. Some increase in rail volume might be expected.

The truckers hauling products to and from the proposed facilities would benefit through their ability to reach stores for loading and unloading. Congestion and parking problems would be greatly reduced, if not eliminated.

The Municipality

The city would benefit by construction of improved facilities to replace those now used in Lower Manhattan. The improved competitive position of the dealers located in the market would undoubtedly bring additional buyers and business to the city. The traffic problem, involving congestion and parking in the present area, would be materially alleviated. The tax base developed by the new market facilities and by redevelopment of the present market area would be greater than at present. Replacing the present facilities would aid the city in its redevelopment program. In the new facilities, sanitary and fire codes could be more easily enforced.

Consumers

Consumers in the New York metropolitan area would benefit as much from improved marketing facilities as would any other group. From improved facilities, they should be able to obtain commodities in the best possible condition. Many of the unsanitary facilities that are being used in the market would be eliminated. Some of the cost savings would be reflected in the prices paid by consumers for these products.

APPENDIX—ADAPTATIONS OF THE "STANDARD UNITS"

In this study, much has been said about the land, building shell, and certain features of a food distribution center. However, no dealer can operate efficiently unless he adapts his facilities to his needs. In this section, possible layouts for typical dealers are presented to illustrate possibilities.

Adaptation for Dealer Handling Butter, Margarine, Eggs, and Cheese in One "Standard Unit"

It was assumed that this dealer would handle about 3,000 tons of butter, margarine, eggs, and cheese per year. He would refrigerate most of his merchandise, some of which would be frozen products. Because of the limited volume of any one product handled, this dealer would not do substantial amounts of processing, but would receive most products already packaged. He would have to invest about $18,000 in refrigeration equipment and insulated rooms. Improving the office, assuming a simple, functional office, would cost about $2,500. These estimates do not include processing equipment, forklift trucks, and similar mechanical handling equipment, or office equipment. A possible layout for this dealer is shown in figure 13.

Adaptation for Dealer Handling Butter, Margarine, and Eggs in Three "Standard Units"

It was assumed that this dealer would handle about 14,000 tons annually. His volume would be evenly divided among butter, margarine, and eggs. This dealer would receive butter from creameries and pack bulk shipments of eggs, requiring further grading into cartons. He might hold butter and frozen eggs in his freezers. He might not require a large office, and therefore could use the mezzanine for carton assembly for the egg-packing operation.

This dealer would have to invest about $30,000 in refrigeration equipment and insulated rooms, and $3,000 in a simple office. A possible layout for this firm is shown in figure 14.

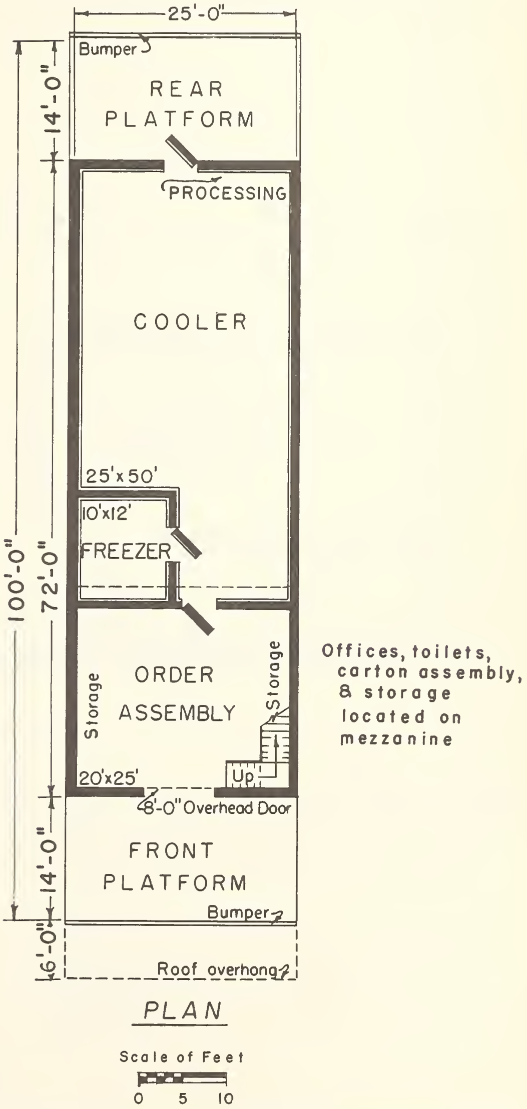


FIGURE 13.—A possible layout for a typical dealer handling butter, margarine, eggs, and cheese in one "standard unit."

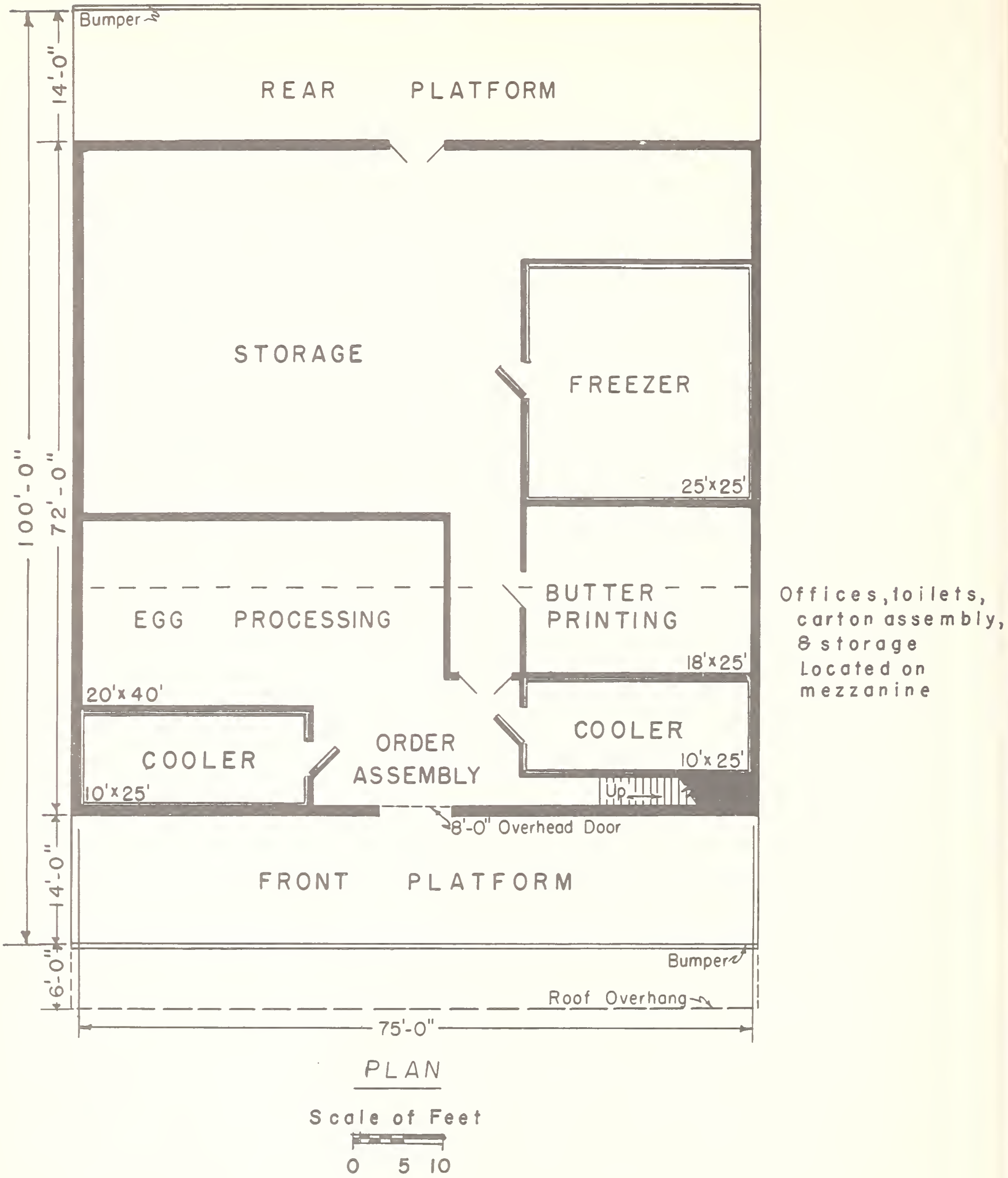


Figure 14.—A possible layout for a dealer handling butter, margarine, and eggs in three "standard units."

Adaptation for Dealer Handling Butter, Margarine, and Cheese in Five "Standard Units"

This dealer in butter, margarine, and cheese, handling the largest volume of any of the typical dealers concerned, was assumed to handle about 24,000 tons annually, including substantial volumes of cheese. It would often be necessary for him to store both domestic and imported varieties of cheese, for varying periods of time. He would print and carton butter, and handle large volumes of margarine. He would have to invest $100,000 in refrigeration equipment and insulated rooms, and in finishing the office on the mezzanine. Part of the mezzanine would be used for butter carton assembly and for light storage. It is probable that this dealer would not need the entire front platform. If it did not interfere with operations of neighboring dealers, he might enclose the front platform with garage-type doors, providing additional area for his operations. A layout for this dealer is shown in figure 15.

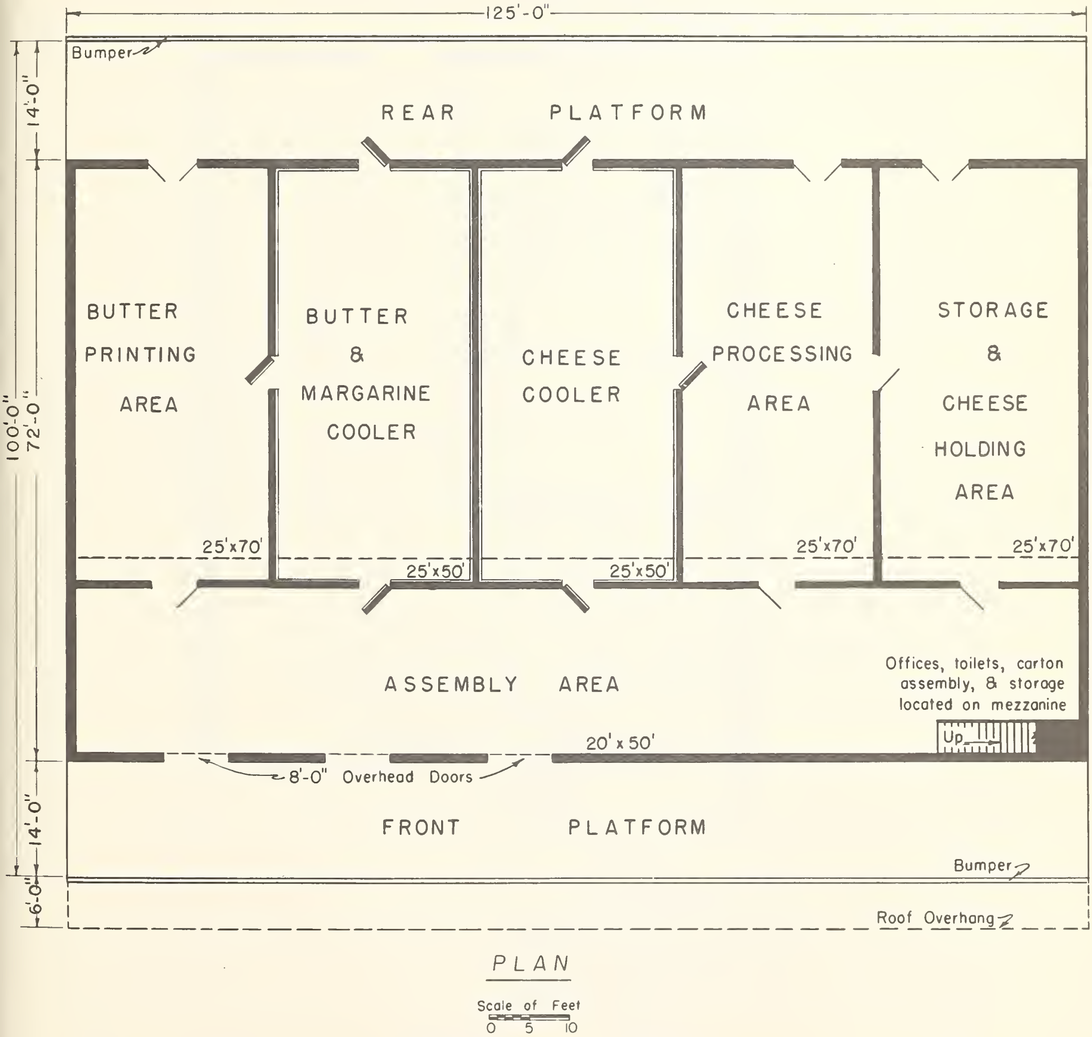


FIGURE 15.—A possible layout for a typical dealer handling butter, margarine, and cheese in five "standard units."

Adaptation for Dealer Handling Eggs in One "Standard Unit"

This dealer would handle about 1,200 tons, or about 50,000 cases, of eggs per year. Because of his relatively small size, he would do little cartoning. Most of his receipts would be graded and cartoned when he received them. However, he would need to check-grade receipts as well as shipments. This dealer would also handle frozen eggs. He would have to invest about $10,000 in refrigeration equipment and insulated rooms, and $2,500 in his office. A layout for this dealer is shown in figure 16.

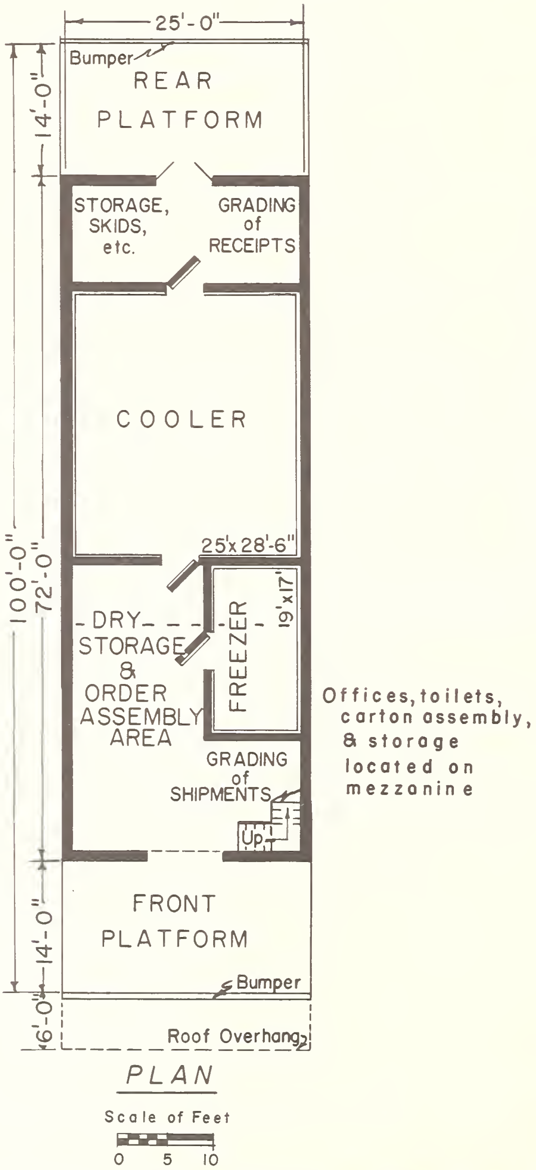
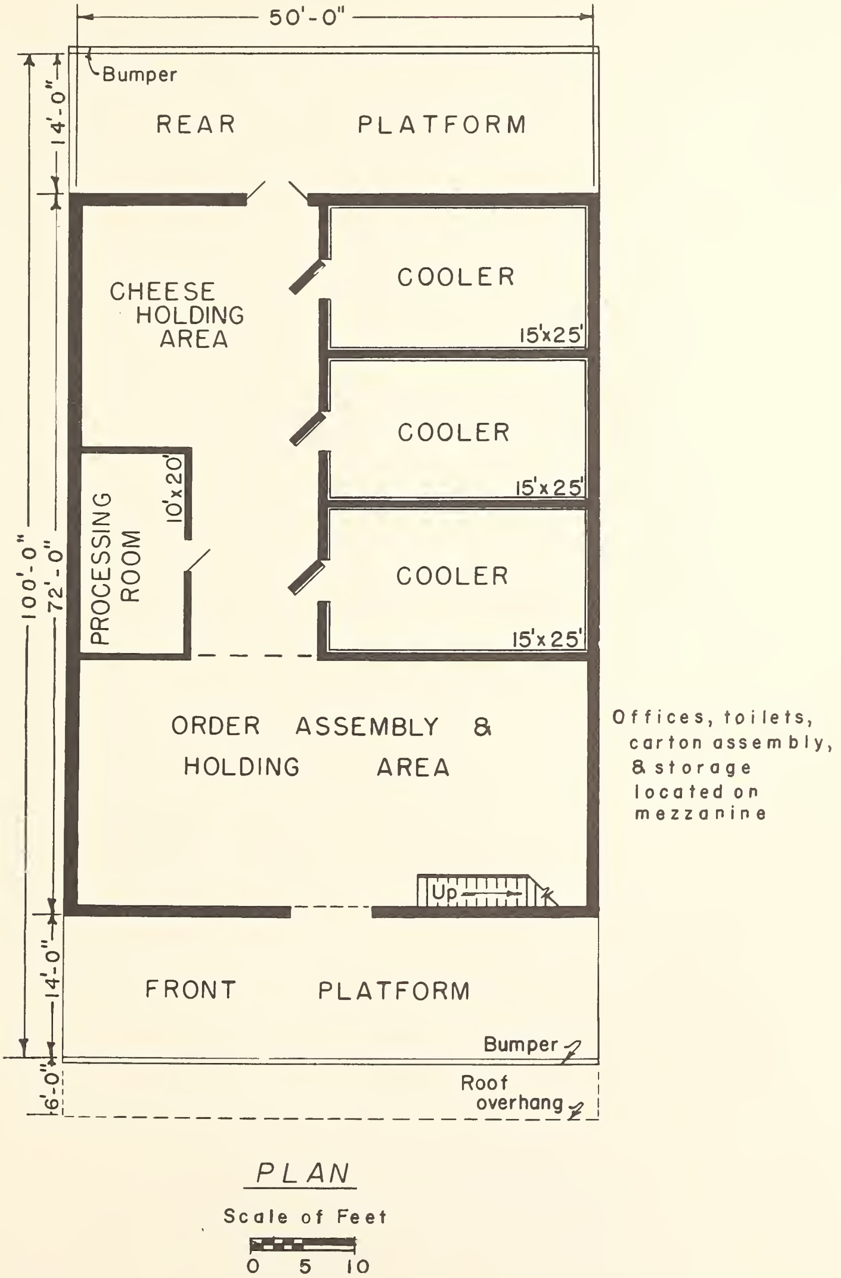


FIGURE 16.—A possible layout for a typical dealer handling cartoned and frozen eggs in one "standard unit."

Adaptation for Dealer Handling Cheese in Two "Standard Units"

This dealer would handle about 1,000 tons of cheese per year. A large percentage of the cheese would be imported varieties, for which he might act as an import agent for customers located throughout the United States. Most of the local customers would be retailers or other wholesalers in the New York area. The average customer order would be for about 10 varieties of cheese.

Several small coolers and room-temperature holding areas would enable this dealer to meet the holding requirements of specific cheeses. He would have to invest $10,000 in refrigeration and insulated rooms, and $3,000 in his office. Figure 17 shows a layout for this dealer.



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